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OIL WORLD

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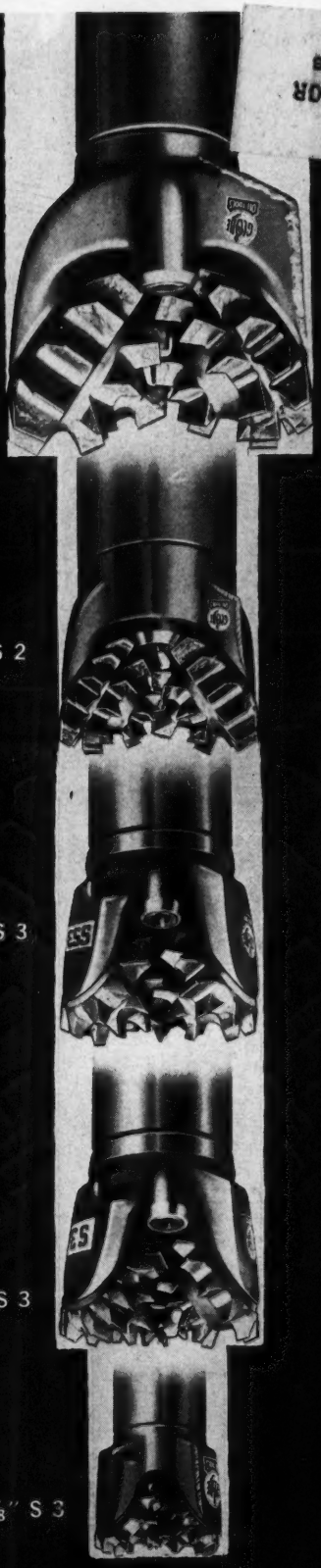

15" LONG TOOTH SS 2

9⅞" LONG TOOTH SS 2

9⅞" SS 3

9⅞" S 3

6⅛" S 3

FROM
TOP
TO
BOTTOM

IN MEDIUM
FORMATION
HOLES

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ROCK BITS
STAY
ON THE
BOTTOM
LONGER

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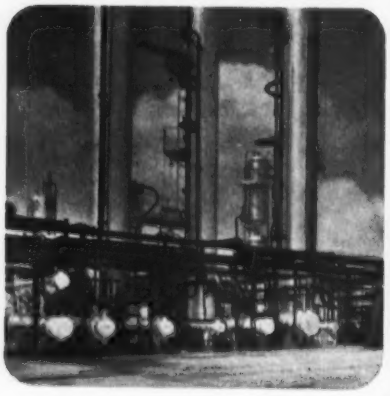

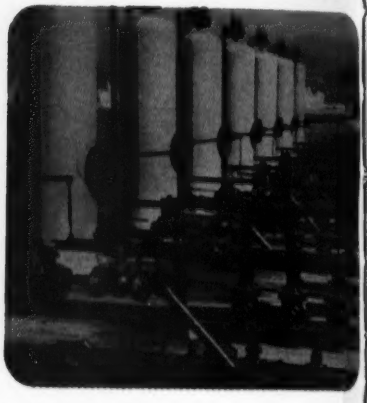

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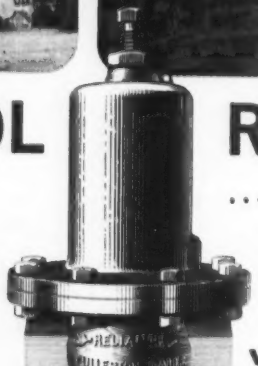

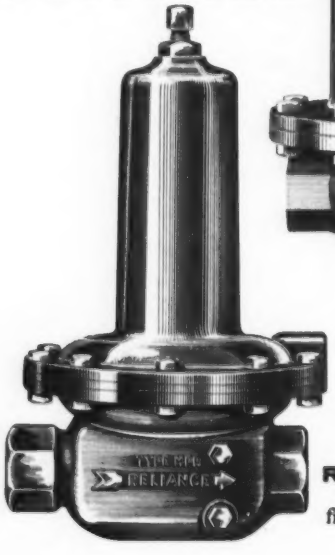

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REGULATOR DIVISION
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OIL WORLD

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Standard of California Couples Computer System to Complex Cracker

How do you calculate optimum settings for a complex refinery cracker on stream before the readings being used become obsolete?

This is the problem always faced by refinery men seeking the best products yield. Standard Oil Company of California has taken a long step toward solving this problem by installing a process control computer system on its huge fluid catalytic cracker (FCC) at El Segundo. The installation of the custom-built IBM system is now being completed and will be in operation early this summer.

This cracker is the largest, most complex refinery unit ever to be coupled to a computer system. The computer will feel the pulse of the cracking plant 24 hours a day, sensing changes in heartbeat, and quickly give the operator the necessary diagnosis for healthy operation.

The installation follows several years of study organized by California Research Corporation, Standard's research arm. Cal Research vice president L. P. Elliott explained: "Members of the study team included process engineers, control specialists, computer experts and FCC plant operators. To develop a computer control program, the team had to understand the ins and outs of the complex, temperamental FCC unit perhaps better than any group ever has before."

Last fall, Standard of California announced that its large IBM 704 computer (later the IBM 7090) at San Francisco was being used to provide control data to the El Segundo FCC operators 400 miles away. This was a vital part of the study used to test the control system that is being installed on site. And now, what are the prospects for economic returns?

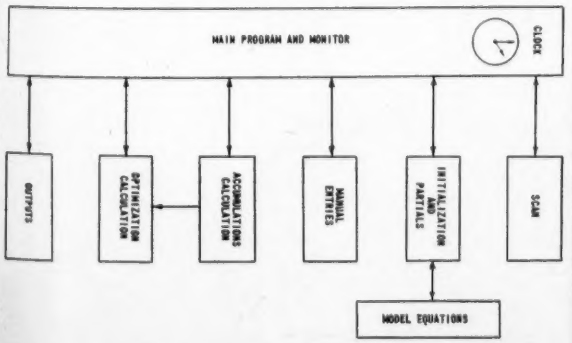
"The project will be successful if experience shows that the operators get a 2 per cent increase in the value of products from this unit," said J. T. Higgins, vice president of Standard's Western Operations. "And we think they'll do at least that well."

Computer Program and Control

The control program can be divided into six steps (see Drawing A). First, the computer **scans** the 75 points of information—temperatures, flow rates, pressures, etc.—at an average rate of 40 points per minute. (The computer can scan a maximum of 20 points per second.) This information is stored in the unusually large memory file of the computer.

Second step is initialization—the computer determines the present operating condition of the plant from the scanned data. It reduces the

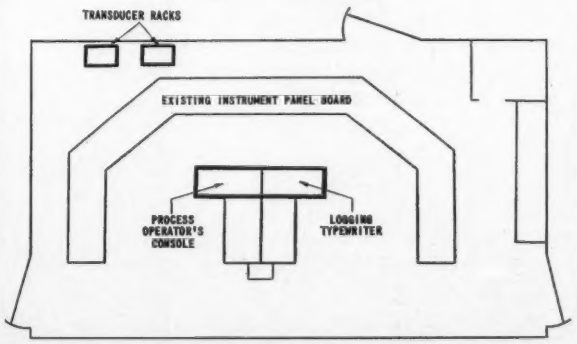
DRAWING A



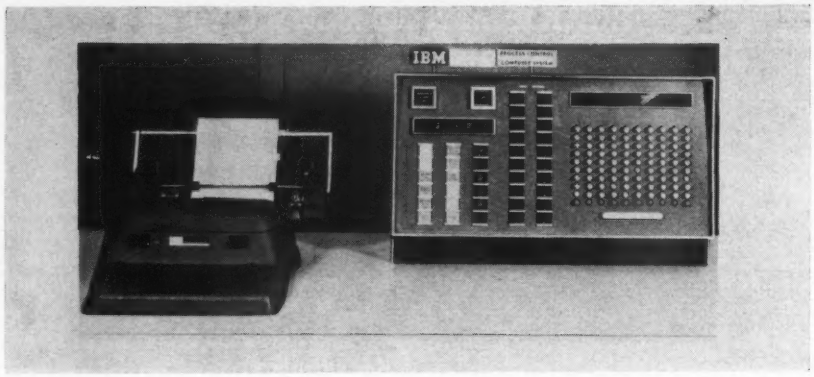
A block diagram of the computer program used in the FCC computer control system.

DRAWING B

EL SEGUNDO FCC UNIT CONTROL ROOM



The heavy black lines enclose computer control system equipment added to the FCC control room.



Process operator's console by which messages are sent to the computer and typewriter on which messages are received from the computer.

problem to this question: "How much should each control be changed from its present setting to improve performance without violating any of the plant limits?" To answer this question, it is necessary for the computer to contain a set of equations which is good enough to extrapolate a short distance away from the present operating point and have instructions stored in its memory to supplement the continuously gathered data.

The accumulations calculation figures the extent of the imbalances in the plant—for instance, heat being generated against heat being absorbed. This procedure was a key result of the development work.

The optimization calculation involves the use of linear programming and includes special features developed for this application. Cal Research specialists, along with the IBM personnel working jointly on the project, believe that this linear programming is generally applicable to optimizing control of process units.

The complete calculation is made on a fixed time frequency, and is also triggered by emergency combinations in the 75 variables.

The scanning and digestion of data occurs continuously; the new results will be calculated about every 15 to 20 minutes in most situations.

Physical Installation and Communication

Most of the computer control system is housed in a small building about 100 feet from the FCC control room. The physical installation, designed by the Standard of California Engineering Department, included the building itself and installation of transducers to convert air signals from the cracker to electric signals for the computer.

The FCC operator in his control room will communicate with the computer system through a small console with labeled switches and lights, the Process Operators' Console (see Drawing B). With the console, he inserts new information into the computer's memory, modifies data on the plant situation, or calls for special action from the computer. The results of the computer calculations then reach the operator on a typewriter located beside the console.

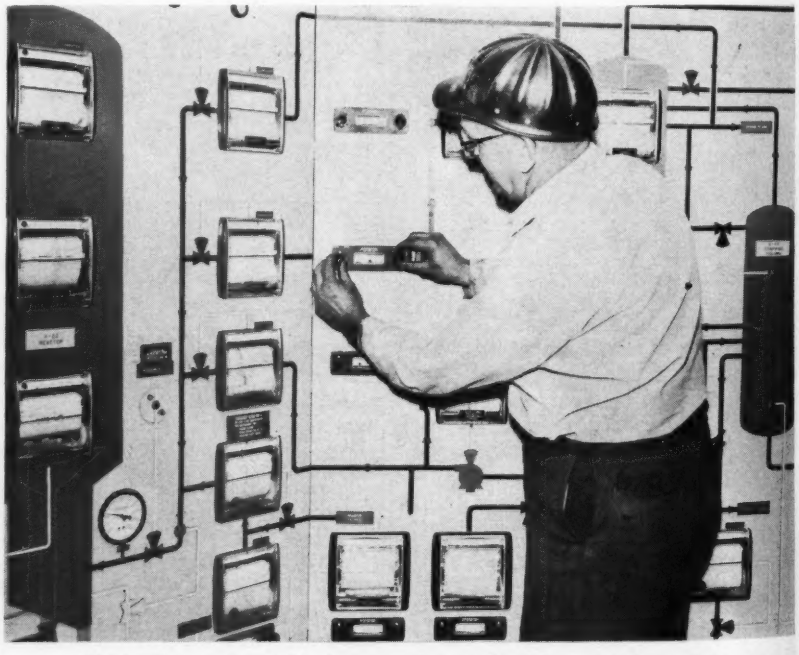
The plant operator is an experienced man at catalytic cracking. To make certain that he can truly use this new tool for extending profitable operation, a great deal of planning and ingenuity went into the communication system. The operators themselves contributed significantly to planning this phase of the computer system design.

How does the operator make use of the computer system?

He can, for example, change operating limits as required to reflect changes in equipment performance. He must have this facility because some of the limits are tied to the mechanical condition of the process equipment which can change due to such factors as ambient temperature, aging, fouling, and the like. Some of these changes occur frequently; others over a period of weeks. If the operator does make a change in limits, he obtains at the end of his shift an estimate of the amount of product value associated with this limit. In effect, he gets a measure of the value of being able to get more performance out of the key items of plant equipment. Since these values change with operating conditions, it is helpful to the operator to have up-to-date numbers supplied by the computer system.

Insurance Against Errors

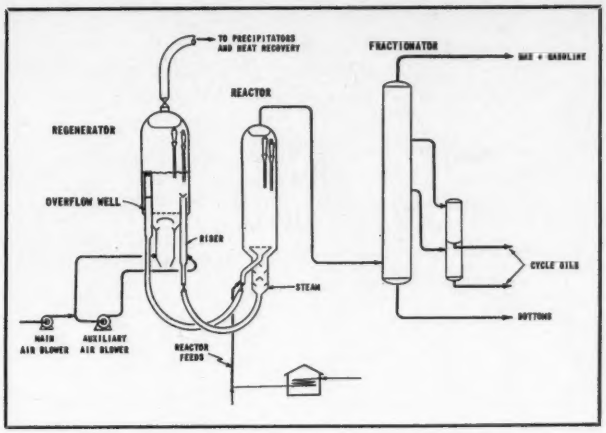
The operator must also have control over certain contingencies and be able to modify the computer behavior as required. For example,



The head operator switches from open loop to closed loop control of a fluid catalytic cracking unit.

```
08.96  AIR RATE METER IN SERVICE, SCANNED VALUE BEING USED
10.43  LT RECYCLE METER OUT OF SERVICE, MANUAL OVERRIDE
       0.000 BEING USED
20.95  INCORRECT CODE ENTERED, CORRECT AND REPEAT ENTRY
21.02  REGEN TEMP OPERATOR MAXIMUM CHANGED FROM 1120 TO 1145
07.55  SCAN LIMITS FOR TI 1-45
       PRESENT VALUE      920      UPPER SCAN LIMIT      980
       MAX FIRST DIFF      10      LOWER SCAN LIMIT      890
```

The messages received from the computer are phrased in FCC operators' language. The first entry in each message is the time, expressed in decimal hours on a 24-hour clock. The top message confirms that a meter which had been out of service has been restored. In the next message, the computer is using a value of "0" while a meter is out of service. The next line is typed when the operator attempts to enter a wrong code. The fourth sample confirms that the operator has changed the maximum allowable value of regenerator temperature from 1120°F to 1145°. The last sample summarizes the present value and upper and lower limits for temperature point TI-1-45. It also shows the maximum first difference, a measure of the "noise" in the temperature determination.

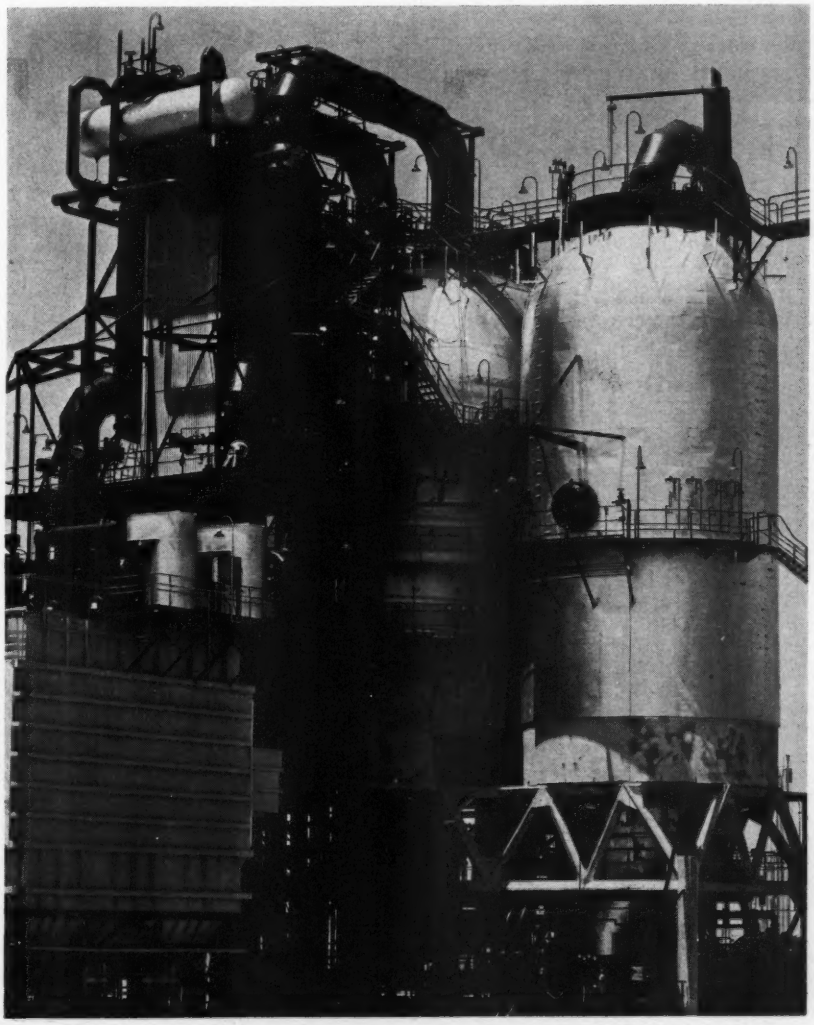


one or more of the 75 instrument points which are scanned into the computer may become temporarily inoperative due to equipment failure or to removal from service for routine maintenance. The operator is able, in this case, to inform the computer system that the affected instrument is out of service and to indicate whether the computer program should use the last good value recorded in its memory or should use an "override" value selected by the operator. Another possibility — the operator may wish to get a record of all flow rates or temperatures during unusual operating periods. He can demand this kind of information and have it printed out on the second typewriter in the control room.

Along with this degree of control exercised by the operator comes the problem of providing insurance against mistakes. Built into the computer system is a detailed check and balance procedure. Changes made by the operator in the key equipment limits, for example, must pass reasonableness tests which have been determined in advance by plant supervision and recorded in the computer's memory. If the operator inadvertently makes an entry which does not meet these checks, he receives a message on the typewriter stating that an error has been made and the computer system will not recognize the proposed change. If, on the other hand, the operator has made an entry which meets all of the tests, then he receives a confirming message on the typewriter. This forms a record which is available to the operator within a few seconds and which also is available later to the next shift.

A total of almost 500 messages is built into the system to help the operator get full value from the computer.

In operation, the computer scans the status of the 75 variables, makes recommendations for new settings based on their status, then makes a prediction of what product mix the new settings will provide. It then does another scan and normally would find that the product mix does not quite meet the optimum mix it



The reactor, right, and the regenerator next to it are the heart of the 20-story high fluid catalytic cracking unit.

predicted. So, it then recommends slightly different settings, thus coming much closer to optimum than would ever be possible without its rapid-fire calculation.

Open Loop and Closed Loop

The system is designed so that the operator can "close the loop" on the most important control variables. The operator can instruct the computer system to change the cracking plant controls according to its own calculations. Both the Cal Research engineers and the operating personnel believe that use of the close loop feature will become a regular practice.

Scientists from Cal Research and IBM have designed a computer system which recognizes the operator as the essential link in the loop, whether closed or open. Standard of California sees the computer system as an attractive tool to provide the operator with automatic, rapid, continuous calculations to gain optimum production.

Subsidiary of Standard Oil Opens New Plant in Japan

California Chemical Company, a subsidiary of Standard Oil Company of California, recently announced the incorporation in Japan of a new company—Karonite Chemical Co., Ltd.—in which Calchem has a 45 per cent ownership interest.

Karonite will manufacture and sell Oronite lubricating oil additives and alkylphenols in Japan under a license from California Chemical Company. Calchem's Japanese partners in the joint venture are the Kao Soap Co., Ltd., which also has a 45 per cent interest, and Nomura Jimusho, Inc., which has a 10 per cent interest.

Kao Soap is the largest producer of soap and synthetic surfactants in Japan. Nomura Jimusho is the licensed distributor of Oronite lubricating oil additives in Japan.

Engineering work for the construction of Karonite's new plant to manufacture lube oil additives and alkylphenols is scheduled to start in the near future. Involving an investment of about two million dollars, the plant is expected to be on stream in 1962. It will have an annual capacity of approximately two million gallons of finished lube oil additives and a half million gallons of alkylphenols.

The new plant will be built at Kawasaki, an industrial area near Tokyo. It will be adjacent to Kao Soap Co.'s new finished detergent plant now under construction.

Security Valve Sets Up New Headquarters

A new $250,000 facility, covering some 15,000 square feet, was recently dedicated in South Pasadena, California. This facility is the new headquarters for Security Valve Company, a subsidiary of Menasco Manufacturing Company. The dedication event took place on the firm's second year in the new location.

Walter Jorgensen, Security Valve president and founder, announced the new facility enables the firm to consolidate more efficiently the expanding corporate functions as well as the departmental requirements of sales, engineering, manufacturing.

Security Valve has developed several unique valves for both industry and manufacturers' valve-control systems in such application areas as gas line, chemical and petroleum, according to Jorgensen. Among the wide range of valves now being used in the petroleum industry, Security makes available multiple combinations of actuators, valve bodies and accessory equipment. These petroleum and petrochemical valves can be operated manually, electrically or by pneumatic-hydraulic actuators, as well as by any combination thereof. Three basic valve bodies are furnished, which include split, solid or "Y" type. In addition, Security also provides a standard line of check and automatic shutoff valves up to 14". All valves are ASA qualified and range in operating pressure from 150 to 2500 pounds. Special valves have been supplied with pressure ratings up to 50,000 pounds. Body sizes range from ¼" through 14" or larger, with screw, weld or flange ends. Materials include all of the normally castable alloys, as well as some of the newer exotic metals.

The firm markets its products and services nationally and in Canada. In conjunction with the parent corporation, Security's resources include complete research and development, metallurgical laboratories, plating, heat treating and welding.

Jorgensen concluded that 1961 sales volume would be significantly improved with a corresponding increase in plant employment.

Stockholders Approve Name Change for Food Machinery & Chemical Corp.

Food Machinery and Chemical Corporation will change its name to FMC Corporation on July 1 of this year. A management proposal to make the name change received stockholder approval at the company's annual meeting held May 23 at FMC's offices in San Jose.

FMC chairman Paul L. Davies said that the company, as one of the most broadly diversified producers of industrial and agricultural machinery, basic chemicals, and defense materiel, had outgrown its name.

How FMC serves the petroleum industry:

Chiksan Company, Brea, Calif.: Swivel joints; cementing, blowout preventer and rotary hoses; truck and tank car loading arms; barge and tanker loading systems.

Oil Center Tool Company, Houston, Texas: Oil and gas wellhead flow control equipment.

Well Equipment Mfg. Corp., Houston, Texas: Wing nut unions, thread and tool joint compounds, Hamer plug and line blind valves.

Peerless Pump, Los Angeles, California: High capacity pumps for oil field and refinery uses.

Chemicals and Plastics Division, New York, N.Y.: Phosphorus compounds for gasoline additives.

Chlor-Alkali Division, New York, N.Y.: Soda ash, caustic soda, and chlorine for refining crude oil stocks.

Mineral Products Division, New York, N.Y.: Phosphorus and barium chemicals for drilling muds; barium compounds for lubricant additives; magnesias for special refinery processes.

Canning Machinery Division, San Jose, California: Filling and casing machines for canned petroleum products.

John Bean Division, Lansing, Michigan: High-pressure pumps for refinery uses, core drilling, water flooding, and salt water disposal; couplers for portable pipe lines; high-pressure fog and volume fire-fighting equipment.

Packing Equipment Division, Riverside, California: Drum and case automatic handling and warehousing systems.

Chicago Pump, Chicago, Illinois: Sewage and industrial waste treatment equipment; pumps.

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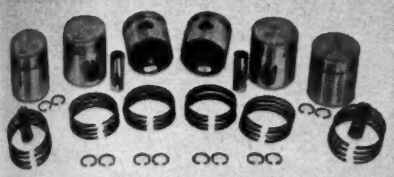
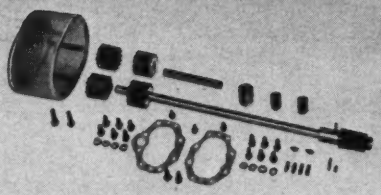


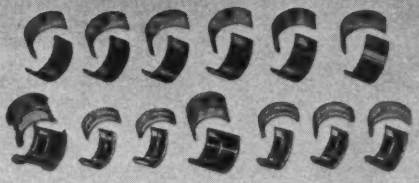
Matched in sets for weight and balance. Correctly fitted sizes.

OIL PUMP PARTS



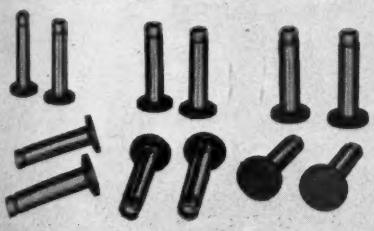
Precision bushings, shaft, gears, clearances. Correct gasket sizes.

MAIN AND ROD BEARINGS



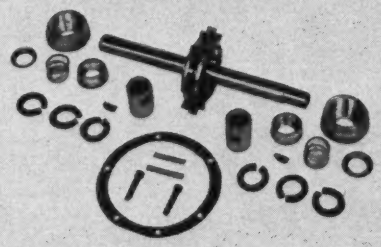
Absolutely clean. Numbers correct. Best materials. Perfectly sized.

VALVE LIFTERS



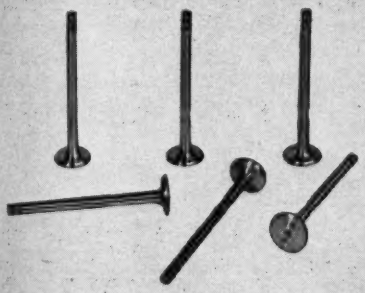
Factory heat-treated and ground. Accurate metallurgy and dimensions.

WATER PUMP PARTS



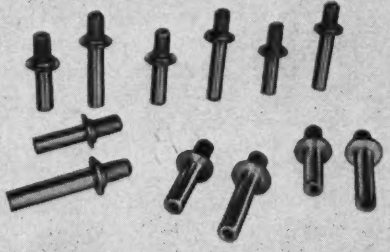
Precision bushings, shaft, seals—accurately balanced impellers.

INTAKE AND EXHAUST VALVES



Quality and best materials ensured—no nicks, burrs, hand prints.

VALVE GUIDES



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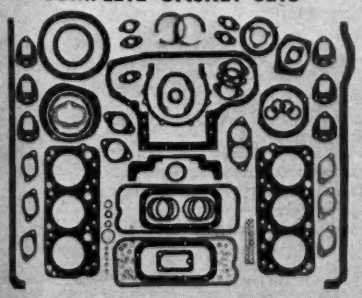

A right gasket for every place on your engine—dimensionally stable.

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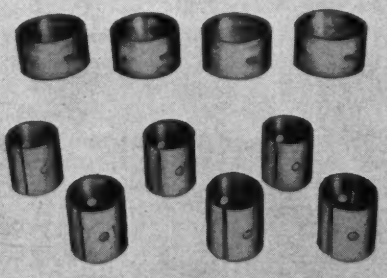

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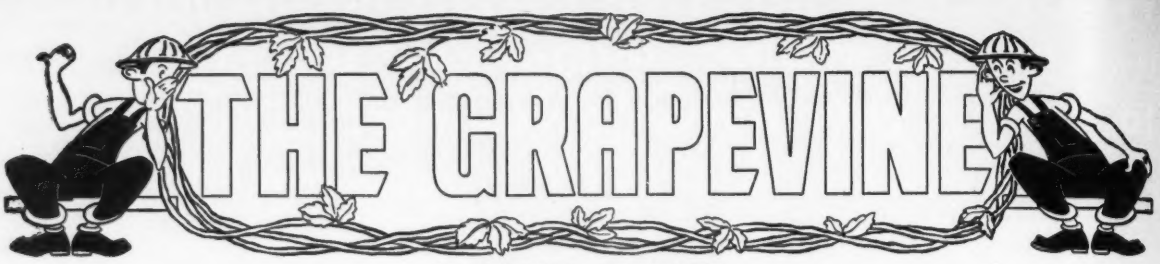


By RICHARD SNEDDON

Hovercraft News

A reliable source of interesting and useful information is the advertising section of any good magazine. In a recent Shell ad in the popular English publication, "Punch," we note that the company fuels and lubricates the British prototype (that's the original model, from the Greek "protos," first, and "typos," type) Hovercraft. This extraordinary device is shaped like a big cup and saucer, makes and rides on its own cushion of air over land and sea. It needs no special tracks, roads, ports or piers, and its efficiency increases with size. As a matter of fact, plans have already been drafted for a big one, weighing 1000 tons, to be used as a ferry. It will travel just above the surface of the water at an estimated speed of 80 knots. If you see one of these babies coming in to the slip, better duck into the nearest bomb shelter until it is tied up.

Tubular Goods

In the same magazine we found a two-page spread by a manufacturer of tubular goods. The people involved, Accles & Pollock, were a little disturbed because in answer to a questionnaire only five persons in the whole of England were able to name all the 210,264 different types of precision tubing made by the company. To make matters worse, the five intelligent persons who did know were all members of Accles & Pollock's board of directors. The ad attempts to remedy this situation by describing a bewildering variety. There are 2000 kinds of noncircular tubes, and among the circular or cylindrical kind there is one that is too small to illustrate. It is so small, indeed, that 250 miles of it weighs a mere 10 lbs. 6½ ozs. The firm makes special little tubes to reinforce the high heels on ladies' dress shoes, so now you know why it hurts so badly to have your instep transfixed. Some species of tubing have walls that are only four-thousandths of an inch thick. That is no thicker than the shell of a sparrow's egg, and is all the educational stuff we are going to hand out at this particular seance. Watch carefully, however, for further bits of scientific oddity in future issues, you luckies!

Warren Johnson Is Feted

The idea obviously wasn't exactly new, because since his retirement Warren Johnson has had more parties than a betrothed sorority president, but any way it was a real nice idea for Bob Cook, Onos Lindsay and Ross Wiley to toss a very special whingding for Warren and to invite a stash of his very special friends down to the Petroleum Club of Long Beach to make wassail. Certainly we personally were more than proud to mingle with the resulting consortium of high brass and we had lots of fun trading tall tales with the pick of the local rope chokers and swivel necks. Warren, as practically everyone knows, was manager of the Southern Division producing department of Standard of California, Western Operations, and president of Lomita Gasoline Company, which latter office he still holds. The affair began with a cocktail hour, in order that no one would suffer from agglutination of the espiglottis, and it really worked. By the time we sat down to dinner anyone in the gathering would have made a speech on the slightest provocation and dog-house stories were a dime a dozen, especially the one about the tipsy barbecuist and the beatnik, as told by Tom Johnston, who, incidentally, could make a fortune by recording his rich repertory in his rich Texas tongue. Tom does not enunciate—he explodes words, and few of our top entertainers are as entertaining as he.

On the Same Tack

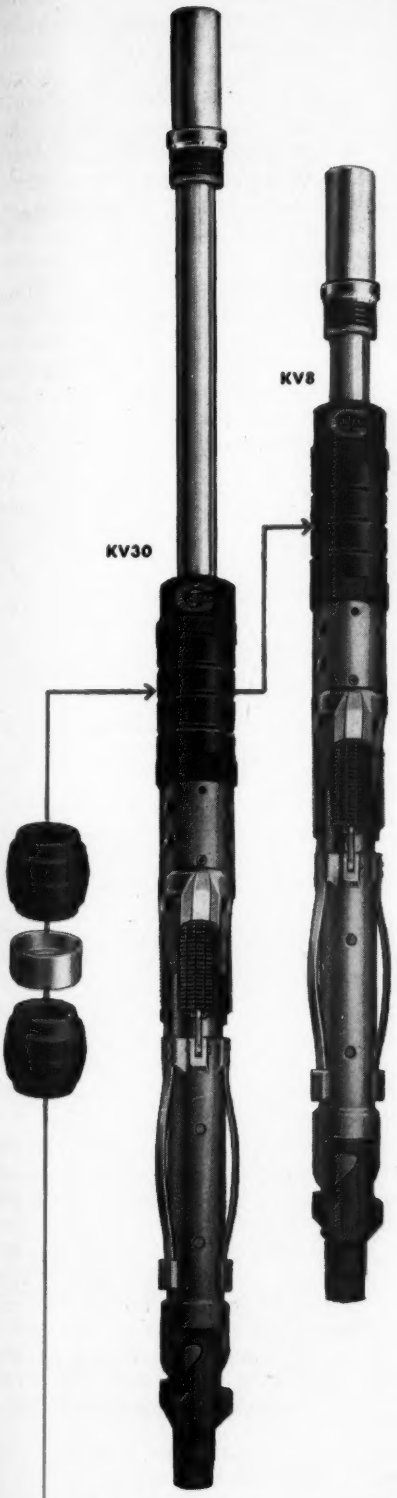
Getting back on the beam, the party was mercifully free from speeches. Bob Cook and Onos Lindsay made some sort of casual mention of its purpose, but there was no oratorical profundity and quavering senatorial-type adieus were conspicuous by their absence. The result was that everybody had a chance to meet and chat with everybody else, and in consequence the affair turned out to be what Samuel Pepys, the diarist, would have termed a "delightsome frolic." The most pretentious speech of the evening was that delivered by Warren Johnson, and this was just an impromptu but interesting series of reminiscences out of his 45 years of oil experience and involved a great many of those present. There was no "sadness of farewell" in this either. Warren has already had some real good times since he arrived at the age of retirement and is looking forward to plenty more. He was planning to take off on a European jaunt in a few days time and there is every indication that when he comes back he will be busier than the crossing cops at 7th and Broadway, so there was no occasion for weeping, wailing, and gnashing of teeth.

Among Those Present

There to do him honor and wish him the best were such consequential people as Jud Hillman, the Hillman-Kelley executive, one of the oil industry's favorite people; Bob Bauer and A. J. Field, from the top echelon of Global Marine, drillers of the Mohole, among other things; A. W. "Bob" Gentry, recently elected president of Monterey Division of Humble Oil Co.; Bill Cline and Jim Harris, a pair of Ivy Leaguers from Sun Drilling; Stan Williams, half of the Haney-Williams enterprises and Wildcat songbird; Keith Bright, the lad who put the "K" in Ken Corporation; Hugh Gallagher, handsome Young Camay Drilling Co. veep who would make a nice addition to the staff at 77 Sunset Strip; N. N.

Durable and Dependable

GUIBERSON'S *KV* PACKERS



Two-piece G2 rubbers with metal spacer are interchangeable and optional at no extra cost. One-piece sleeve rubber shown on packers furnished unless otherwise specified.

Here is the retrievable packer that operators everywhere count on for rugged durability and dependable performance. The KV Packer is designed for wells up to 12,000 feet deep. Construction is as simple as it is tough and husky — price is reasonable. In short, the KV Packer gives you more packer for the money — quick setting, easy pulling, ample bypass and positive seal.

- Made as the KV30 with 30″ valve stroke or the KV8 with 8″ valve stroke for standard below-packer circulation. Available in casing sizes, 4½″ through 9⅝″.
- Valve has two independent sealing elements, a tapered metal valve and seat and a set of oil-resistant seal rings, affording double-sealed protection.
- Choice of two types of rubbers, both made of special oil and gas resistant compound. Will not vulcanize to casing — recovers original shape when released.
- Easy operating jay-hook type latch with heat treated friction springs.

THE GUIBERSON CORPORATION

ESTABLISHED 1919

DALLAS, TEXAS U. S. A.

"Chubby" Jones, the affable Humble superintendent; Frank Leonis, scion of a noble house and roving ambassador for Security Engineering; the Kelloggs, K. L., Joe and Forrest, whom we have always regarded as high-class people, Joe, by the way, immediate past president of the Long Beach Petroleum Club; and Bill Butler, the Union Oil Company production whiz who was born on an oil lease.

There Were Others

Don't go away, we aren't through yet. Also on deck were Ray Powell, the Santa Fe Drilling chap who, as nearly as we can remember, is accompanying Warren Johnson on his European jaunt; Roland Norris, the Macco beau brummel who could also get a job at 77 Sunset Strip but doesn't need it; Elmer Decker, proprietor of the Martin Decker enterprises, which have expanded terrifically in the past few years; Lee Wardle, Globe Oil Tools Company's globe-girdler; Fred Johnson, the contract driller who looks like a brother of M. O. Johnston but is no relation; Tommie Johnston, president of Johnston Tool Company, a real enlivener of any gathering of two or more; Cecil Weaver, the pleasantly disposed local manager for Johnston Testers; Hi Whitney, the cheerful giant manager of Cook Testing Co.; M. H. "Curly" Stansbury, head of the Stansbury enterprises; R. S. Willis, owner of the tool company by the same name; Bob Pollard, Southern Division production manager for Richfield; an interesting National Supply trio, Jerry Evans, Chuck Chandler and W. W. Mefford; and from Rushing, Inc., drilling contractors, Hebe Rushing, and our Caledonian friend, John McEwen.

And Still More

Then there were Tom Ashe, former Globe export manager, now associated with the Eberly Travel Service; Ross McClintock, the tall, handsome veep of Western Offshore Drilling & Exploration Company; Jack Hamman, manager of Eastman Oil Well Survey Company; Leonard Graves, general superintendent for Signal-Hancock; Bill Ilfrey, chief engineer for Humble Oil & Refining; Wilber Stanley, one of our brothers in Delta Sigma from Long Beach; and a considerable detachment of higher echelon Chevronites, including J. T. Crooker, Warren Johnson's successor, recently from Anchorage, Alaska; Mal Morris, assistant division manager; C. D. Mims, assistant general manager of the production department; Dave Davis and Clark Thomas from Jules Toussaint's staff in San Francisco; Ed Thatcher, manager of purchasing and stores here; Ted Heitmeyer and Bill Collins, who run the Valley producing district from Taft; Jack Auser, division drilling superintendent; Ray Tyner, Jack's assistant; Carl Waterman and Clyde Kelly, retired drilling foremen; and Jim Reinhart, current drilling foreman. Altogether it was a very nice party in tribute to a very nice guy who was sent off to England with a pocket full of pounds, shillings and pence, and a sackful of good wishes. We were real happy to be a part of it and are much indebted to Bob Cook, Onos Lindsay and Ross Wiley for letting us in on the deal.

Left to right: Mrs. Betty Conley, pres. of Association of Desk & Derrick Clubs; Mr. C. R. Dodson, vice pres., United California Bank, Los Angeles; Mrs. Juanita Hollis, pres., Ventura Desk & Derrick Club; Miss Norma Ellsworth, chairman of Regional Meeting, 1961; Mrs. Mary Pancoast, director, Region VIII. Not shown, Mrs. Bea Linville, Richfield Oil Corporation.

Here & There

We note that Thad Randolph recently lost the city of Azusa to Lloyd Gilmour in a cribbage game up in Edmonton. The winner is the publisher of an oil magazine up there, and he came down to Azusa recently to claim his winnings. All he got was a key to the city from Mayor Anthony Ortuno. Thad, of course, went to the hoosegow for risking property that he didn't own, but because of all the favorable publicity he stirred up, his sentence was suspended, and he is now open for another joust. H. F. "Don" Donley, long-time Axelsonian and barbecuist extraordinary, has resigned to become manufacturer's agent for the John N. Martin Mfg. Co. of Tulsa, and the Baird Mfg. Co., also of Tulsa. His specialties henceforth will be plungers, rubber-lined cages and oil production and waterflood equipment. You can contact Don at 400 B Street, Taft. Best wishes to Olen Lane, Continental veep, who goes into retirement after 38 years of strict application to business, and congratulations to his occasional golfing companion, Glenn Davis, who was recently named to football's Hall of Fame at Rutgers!

D & D Gals Convene

Santa Barbara was the venue this year for the grand annual convention of Region VIII of the Association of Desk & Derrick Clubs of North America, and 133 members from the Western United States attended and were well rewarded for their interest. The group was welcomed to Santa Barbara by Mayor Edward Abbott at the morning session on opening day, immediately after which Mrs. Mary Pancoast, director of Region VIII, took over the gavel and conducted the first business meeting. At the luncheon meeting, presided over by Mrs. Juanita Hollis of Union Oil Company, president of Ventura D & D, the featured speaker was Charles R. Dodson, vice president of United California Bank, who spoke very effectively on the relationship between petroleum banking and free enterprise. In the evening, the local group staged a luau in the Montecito Room of the Miramar Hotel (convention headquarters) for their guests, and topped it off with some fine amateur entertainment. The following morning, the entire gathering was hosted by Mr. Sam Mosher, Signal's chairman of the board, at his fabulous Dos Pueblos Orchid Ranch, which made an exciting and altogether enjoyable windup to a most constructive interlude.

Las Minute Bits

Paul Andrews is now in La Vinia Sanitorium, 3900 Lincoln, Altadena, and would be reeal pleased to have you drop him a note. Same goes for Jack O'Brien, whose new address is 3115 Middle Ranch Road, Pebble Beach, California. Haven't seen Tony Alcorn yet but am expecting

to run into him any minute. Had a card from Sam and Edith Grinsfelder, datelined from Edinburgh, Scotland, whence they were taking off for the Trossachs. They had just driven down from London, and en route had visited Oxford, Stratford-on-Avon, and sundry other interesting spots but complained that they couldn't get a good look at the scenery because of the intervention of lakes, green-carpeted rolling hills and daintily hedged farmlands. Had hardly read Bill Goertz's cards from Europe when he walked in on us. Had a wonderful time, by all accounts, and we hope to hear more later. Is having a bit of trouble at home, however, because of a few bad habits he has picked up, particularly leaving his shoes outside the bedroom door at night and expecting to find them shined in the morning. Enjoyed saying hello to Vern Castle down at the Long Beach Petroleum Club on the evening of the Warren Johnson affair; also Bob Emerson, editor of the club's magazine, "Pipe line," a very interesting publication. Which is all for now, cheerio!

Standard of Calif. and Humble Oil Join in Gasoline Plant

A contract for the construction of a gasoline recovery plant at Gaviota to serve gas-producing properties jointly owned by Standard Oil Company of California, Western Operations, Inc., and Humble Oil & Refining Company has been awarded to Black, Sivalls and Bryson, it was announced recently.

The new plant is designed to handle 30 million cubic feet of natural gas daily, three times the capacity of the present equipment.

In addition to recovering natural gasolines from the gas, the plant will condition it for delivery to a Pacific Lighting Gas Supply pipe line now under construction from Goleta to Gaviota.

Work will begin immediately on the new recovery facility and will involve a total investment of approximately one-half million dollars when completed by mid-October. Standard officials said the plant would be equipped with special devices to assure safe, odorless and noise-free operation.

Plans for a similar facility at Carpinteria are also under consideration, the company said.

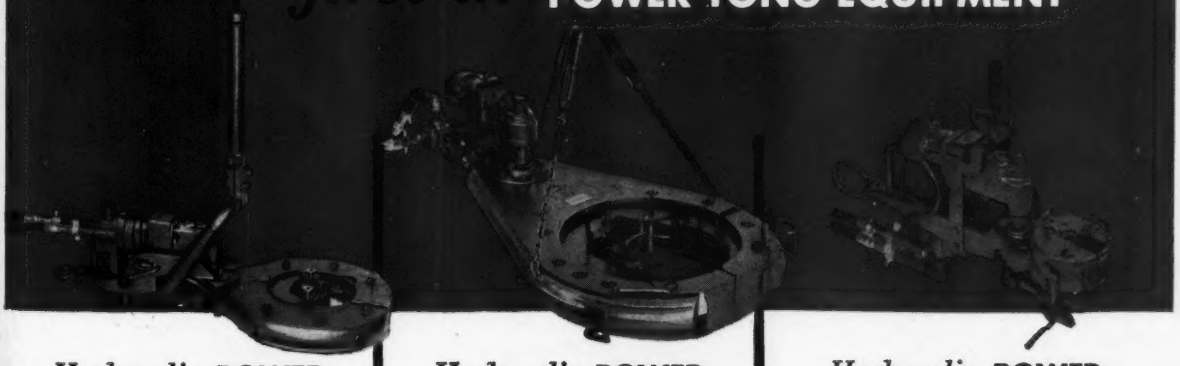
Union Oil Co. Arranges To Pay Gulf Oil Co.

Union Oil Company of California filed a registration statement with the Securities and Exchange Commission on May 18 covering a proposed sale of $60,000,000 of debentures, due June 1, 1986, and $60,000,000 of convertible subordinated debentures, due June 1, 1991. Public offerings of both issues are to be made through an underwriting group headed by Dillon, Read & Co., Inc.

Net proceeds from the sale of the debentures and the convertible debentures are to be applied toward the purchase for retirement of the company's outstanding $120,000,000 of 3¼% convertible debentures (subordinate), which were sold by Union Oil to Gulf Oil Corporation in 1956 and which are to be repurchased from Gulf Oil.

HILLMAN-KELLEY

first in POWER TONG EQUIPMENT



Hydraulic **POWER TUBING TONG***

Hydraulic **POWER CASING TONG***

Hydraulic **POWER SUCKER ROD WRENCH***

**Also available for air operation*

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WILFRED HOY "BILL" GEIS

Oil men of the West were stunned by the recent passing in Houston, Texas, of Wilfred Hoy "Bill" Geis, who had been one of the petroleum industry's outstanding figures for many years. A native of Willows, Glenn County, Bill Geis was graduated from the University of California in 1915 with a B.Sc. in geology and mining engineering, and almost from that moment began to play a leading role in the dissemination of technological understanding of oil field operations.

He was the possessor of a keen analytical mind, a rationalist of a high order, and a crisp, convincing platform orator. His frequent dissertations on such matters as depletion, imports and excessive taxation did much to educate governmental bodies, the public, and even the petroleum industry, and they are still widely used as authoritative texts by oil country courts and councils.

Bill was a ubiquitous sort of chap with a host of friends and an all-encompassing mind. He read voraciously; had taught at California Institute of Technology; and there was little affecting his particular petroleum interests on which he was not well informed. He, perhaps more than any other person, as a member of the California Board of Registration for Civil and Professional Engineers, was responsible for defining qualifications and investing engineers of the State with professional dignity and standing. In recognition of his good works in this connection, he himself, when an enabling law was enacted, was given the No. 1 Certificate as a registered petroleum engineer in California. He was one of the earliest members of the Petroleum Club of Los Angeles, was a past president and one of its stoutest supporters from the date of its inception almost to the day of his death.

Except for time spent with the U. S. Corps of Engineers during the first world war, Bill Geis was continuously engaged in the practice of petroleum geology and engineering for some 46 years. Within this period his employment took him to practically every oil producing area of the United States and to many foreign fields, active and prospective. From 1916 to 1926, while headquartered in Wyoming, he performed comprehensive geological surveys in the Rocky Mountains and the Mid-Continent for a number of organizations, and was at the same time functioning as chief geologist for Republic Petroleum Company, Western Petroleum Company, and Consolidated Oil Company.

Subsequently he foraged about Canada, adding further to his already formidable accumulation of geologic lore, and then in 1926 he returned to California as vice president of Continental Oil Company of Arizona. He later served as assistant to the president of Union Oil Company and represented this firm

in Washington, D.C., throughout the hectic days of World War II. His affiliations also included a term as president of Arrowhead Oil Company, but it was as a consulting petroleum engineer and geologist that Bill Geis really excelled. In the evaluation of oil lands and properties he had no peer and his services were in constant demand by industrialists; city, state and federal government agencies; and banks and financial institutions of wide variety.

Meantime, his inexhaustible energy was also keeping him active in all sorts of petroleum associations and societies. He was at various times chairman of the Petroleum Division of the American Institute of Mining & Metallurgical Engineers, president and a board member of Oil Producers' Agency of California, president of Western Oil & Gas Association, director of Independent Petroleum Association of America, member of the American Association of Petroleum Geologists, and a member of the Conservation Committee of California Oil Producers.

For the past 15 years Bill Geis has been associated with William M. Thornbury in a business partnership that has been highly successful. This combination has been responsible for interesting and profitable exploration and developments in the Santa Maria Guadalupe and Casmalia fields, in Turner Canyon, and in the Grimes Canyon district of Bardsdale. At the time of his demise he was vice president of Wm. Thornbury, Inc., and Thornbury & Geis were involved in a number of other partnerships.

On top of his burgeoning business interests and his technical society affiliations, he still found time to be a playwright and stage director for many years for the Wildcat Committee of Western Oil & Gas Association, of which, incidentally, he was also past chairman. Until about five years ago he wrote and staged the annual High Jinks skit and it was his fine sense of humor and flair for lampooning that created the early popularity for these affairs. It is probable that Bill's No. 1 diversion was dominoes. Whenever he could get away from business commitments, he lunched with the so-called "tile tossers" and thoroughly enjoyed the banter and raillery that are an important part of their noontime jousting.

Bill Geis was without question an oil man of unusual caliber. His contributions to the petroleum industry were many and consequential. He fought valiantly and strenuously for everything in which he believed. He believed fervently that oil and public welfare were indissolubly linked, and thus, with all the ardor of a crusader, he campaigned to guard the industry against untutored invaders who would sabotage a great natural resource and pillage a vital public interest.

With all his intensity, he was a kindly chap, easy to know and easy to like. He enjoyed the company of his friends, was always enjoyable company, and in every respect was an admirable citizen. We salute this petroleic great! And we tender our

sympathy to his good lady, Mrs. Isabel Geis; their daughter, Mrs. Edwin W. Pauley, Jr., and her three children; brother Duard F. Geis, Willows attorney; and sister, Mrs. Roy McFarland, of Butte, Montana. In their sorrow they should, by all means, be proud, however, for Bill Geis made a real mark for himself in the industry, and his total contribution must very definitely be considered a significant part of California's petroleum history.

Winger, V.P., Chase Bank, Says Much in Few Words

"The time has come for selling more—and selling it at a profitable price.

"Stop giving it away."

With both a warning and a pep talk, the American petroleum industry heard what it faces economically in the energy market and what it must do to re-establish a rate of growth and profit.

John G. Winger, vice president of Chase Manhattan Bank and an expert in energy economics, delivered the keynote address at the midyear meeting of the Marketing Division of the American Petroleum Institute at the American Hotel in Bal Harbour.

"The industry can no longer afford the luxury of bad marketing practices," claimed Mr. Winger. "It cannot afford price cutting. If the industry cannot generate sufficient capital internally, then that tends to frighten outside investment."

Winger took note that the industry, recently and currently, has been taking positive action to remedy distillate fuel and gasoline consumption pictures, and encouraged such operations.

"In space-heating," he said, "the petroleum industry will have to match the natural gas industry step by step. It means getting in there and pitching.

"If the industry can persuade the average motorist to drive just ten more miles per week, that alone will mean a 5.6% increase in consumption of gasoline."

"Remember that anything that today competes for the time and money of our people is competition for gasoline."

Winger told his audience that the market for their products was "there"—but that they would have to go out and win it. And that marketing programs and practices were vital to the industry today.

NEW LITERATURE

New Catalog for Petroleum Industry by Dow Chemical

A complete new catalog has been issued by the Dowell Division of The Dow Chemical Company detailing its services and products now offered to the petroleum industry from its 165 locations in the United States, Canada, Venezuela, Argentina, Germany, France and the Sahara area.

Complete descriptions of the company's services in fracturing, acidizing and cementing, as well as specialized services designed to combat specific problems are contained in the booklet. A list of the products designed by Dowell engineers and chemists may be found helpful in oil field operations.

For more information or a copy of the catalog, write Dowell Division of The Dow Chemical Company, Box 536, Tulsa, Oklahoma.

New Gardner-Denver Line of Swivels

Gardner-Denver has released a new 4-page brochure covering its Turbo-lubricated swivels. Designed in five separate models, the swivels cover a drilling range from 4000 to 30,000 feet. A cutaway drawing on the inside page shows construction details. Features of this new line include high pressure, easy change packing, low center of gravity, high capacity bearings, Turbo-lubrication and streamlined steel body.

For a copy of the Swivel Brochure write to the Gardner-Denver Company, Quincy, Illinois.

Chiksan Appoints New Advertising Agency

Chiksan Company of Brea, California, a subsidiary of Food Machinery and Chemical Corporation, has named Rives, Dyke and Company, Inc., of Houston as its advertising agency.

Announcement was made June 3 by H. J. Hagn, president of the California-based concern. Chiksan is the pioneer of the ball-bearing swivel joint used extensively in the petroleum drilling, producing, refining and pipeline industries, as well as in petrochemical, marine, aircraft, food processing and general industry operations.

The firm also manufactures a complete line of equipment used in conjunction with the swivel joint.

Rives, Dyke will handle all advertising and public relations for Chiksan and its foreign division, Chiksan International. The firm has plants in Brea and Houston, and offices and representatives in principal cities throughout the world. Chiksan markets throughout the U. S. and abroad through sales offices, manufacturers' representatives and supply stores.

Shell Oil Co. Presents Interesting Rock Slab To Smithsonian Institution

A recently discovered rock slab containing more than 90 well preserved tracks of ancient mammals was presented recently to the Smithsonian Institution.

The presentation was made during the opening ceremonies of the Institution's newly completed tertiary mammal hall. The rock slab, known as the Strawberry Slab, will be housed in the new hall.

Dr. Leonard Carmichael, secretary of the Smithsonian Institution, accepted the gift from Samuel F. Bowlby, exploration and production vice president of Shell Oil Company's Pacific Coast Area.

The Strawberry Slab was found by two Shell geologists, H. D. Curry and D. A. Preston, in Strawberry Canyon in the western part of Utah's Unita Basin. Curry attended yesterday's ceremonies.

"We are able to present the slab because of Mr. Curry's alertness and his sense of responsibility for helping to increase scientific knowledge. A less perceptive oil geologist might have left the slab on the side of Strawberry Canyon," Mr. Bowlby said.

The animal tracks date back about 40 million years to the Eocene Age. The slab weighs more than 1,000 pounds and is over eight feet long.

The discovery is of major importance to scientists trying to unravel the mysteries of the Eocene Age and to trace the beginnings of higher animal life. Relatively few findings of fossil mammal tracks have been reported, and virtually none rival those on the Utah slab in number or age.

Independents Hope For Crude Price Restoration

The lead article in the first February issue of California Oil World dealt in some detail with the situation of the independent oil producer in California. It outlined the various unfavorable developments of the past three years and some of the improvements which have taken place recently.

Right now it appears that there isn't too much wrong with the local producer's plight, that a restoration in the price of crude oil wouldn't cure.

Light crudes are bringing an average of about 35 cents a barrel less now than in 1957 and heavy crudes an average of about 80 cents less.

Now that the gasoline price war, which raged for a number of months, is over, the major oil companies operating in the West will do very well in earnings. First quarter reports have been most encouraging and in some cases almost sensational.

Since a healthy oil industry requires profitable operation by all segments, major and independent alike, it would appear that a crude oil price increase is to be expected.

It could hardly have been expected that the Western majors would have increased the price they paid for their raw material (crude oil) when the price realized for finished products was so sharply depressed. Now that prices have been restored to previous levels the independent producers are fervently hoping that action will not be longer delayed.

The following summary of first quarter 1961 earnings of major oil companies operating in the West gives point to the case for higher crude prices.

Union Oil Company of California

Net earnings for the first quarter of 1961 were $9,164,026, which was $1.05 per share. This fine showing compared with $5,529,859 in the first quarter of 1960, or 63 cents per share.

Increase in sales of natural gas, increase in petrochemical sales and increased efficiency in operations generally were credited as responsible for much of the increased profits.

Mobil Oil Company

These figures cover worldwide operations, but Western operations contributed to them.

First quarter net earnings, $59,800,000, or $1.23 per share, compared to $47,200,000 in 1960, or 97 cents per share.

The increase was attributed largely to higher volume.

Standard Oil Company of California

Net income for the first quarter was $65,973,000, or $1.04 a share, compared to $60,728,000, or 96 cents a share, for the first quarter of 1960.

Increased Eastern Hemisphere income aided in offsetting the adverse effects of serious price wars on the West Coast, according to board chairman R. G. Follis.

Shell Oil Company

Shell Oil Company's net income for the first quarter of 1961 was $4,709,000, or 57 cents a share, which is just a shade above the income for the first quarter of 1960.

Shell looks for a 30% increase in the United States consumption of oil products in the next decade. It is predicted that continued product diversification will take Shell into fields in which it can capitalize on its proficiency in science, technology, business knowledge and organization.

Tidewater

Net income for the first quarter was $10,979,000, or 73 cents a share. This compared with $5,932,000, or 36 cents a share, in the first quarter of 1960.

Increased sales volume of higher value products had much to do with this increase in earnings.

Gulf Oil

This company reported a 15% increase in earnings in the first quarter of 1961 as compared to the same period in 1960. Per-share earnings were 92 cents and 80 cents, respectively.

The Value Line Investment Survey predicts that domestic earnings are likely to advance further in 1961.

Signal Oil and Gas Company

1961 first quarter earnings were 41 cents a share, compared to 34 cents in the first quarter of 1960, an advance of 21%.

The Value Line Survey says that Signal is beginning to reap the full benefit of its decision to become a fully integrated oil company.

Texaco

For the three months ending March 31, Texaco reported earnings of $1.75 per share, an increase of 11% over the $1.57 reported in the first quarter of 1960.

A strong products price structure in the United States combined with heavy demand for fuel oil in January and February combined to effect the excellent showing.

Reserve Oil & Gas Stepped-Up Drilling Program Increases Production

Reserve Oil and Gas Company recently announced it is completing RST Well No. 16-29 in the Windgap Area of Kern County with a productive interval 138 feet thick. This is the thickest pay section Reserve Oil and Gas Company has encountered in this particularly prolific reservoir.

Well No. 16-29, an easterly follow-up to the recent 300-barrel-per-day completion of Well No. 86-30, is structurally higher than any other Reserve operated well in this JV Sand pool.

On a drill stem test of the upper portion of this interval the well produced gas at a rate of approximately 1850 mcf per day through a ¼" choke. On tests of lower portions of the interval, oil flowed at rates up to 720 barrels per day through a ⅜" choke.

This is the fifth JV producer on the 800-acre block jointly held by Reserve, Tejon Ranch and Sunray Mid-Continent. Reserve has a 40% working interest in the block. The data from Well No. 16-29 makes additional locations to the east quite attractive. Further drilling will be started in the near future.

At the North Tejon Field in Kern County, a short distance north of the Windgap Area, Reserve has just completed Well No. 318-18 to a total depth of 11,696 feet. This well, which appears to be in a fault block not penetrated by any previous North Tejon well, was completed in the Vedder by the notch fracing method. It is currently producing a satisfactory volume of oil and fluid injected in the fracing procedure. Reserve owns 35.52 per cent of the working interest in this well.

DRILLING PRODUCTION PACKERS?

THE A-Z PACKER BIT DOES THE JOB FAST!

With Tubing as Drilling String—

Drills packers in 3 to 4 hours

Drills bridge plugs in 1 hour

Cement at 20 feet per hour

With Drill Pipe as Drilling String—

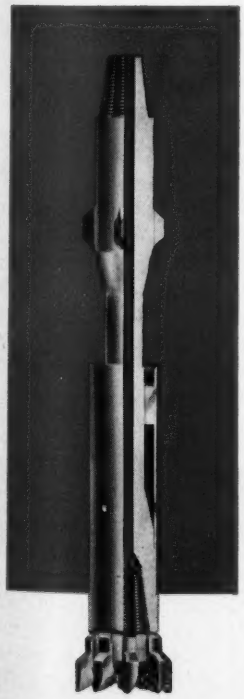
Packers in 1 to 2 hours

Retainers in minutes

Cement faster than rock bits

If you wish to save rig time and not lose cones in the hole, use the A-Z Packer Bit designed especially for this type of job.

If down hole conditions necessitate retrieving the packer, ask for the A-Z Packer Retriever. On all other types of milling jobs, call A-Z for experienced service men using the "World's Fastest Milling Tools."



A-Z PACKER BIT
WITH A-Z PROTECTIVE BASKET

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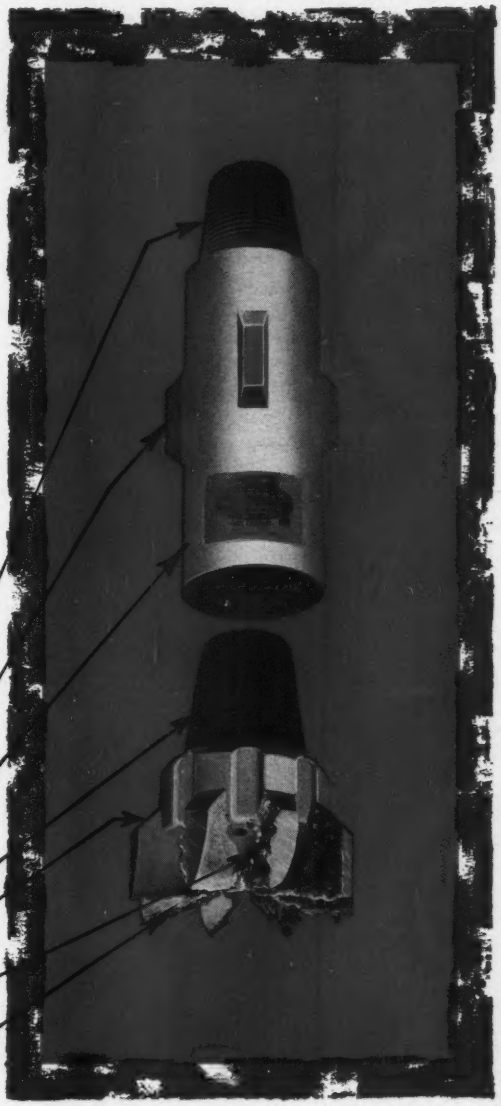
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FOREIGN OPERATIONS
WESTERN OIL COMPANIES

TIDEWATER

Spanish Sahara — Tidewater, through a wholly owned subsidiary, Tidewater Oil Company of Spain, S.A., as operator, with another participant, has exploration concessions from the Spanish government on nine blocks of land in the Spanish Sahara.

These exploration permits range from the border of oil-producing Algeria southwestward to the Atlantic Ocean. They cover about 5,600,000 acres, which is the largest amount of acreage granted to any group of companies in this area.

Following the agreement, a base of operations was established in the Canary Islands off the Atlantic Coast of North Africa. Since October, 1960, geological field parties, gravity and seismic crews have been at work in this area.

Spanish Mainland — Four concessions on the Spanish mainland near Seville totaling more than 187,000 acres have also been granted to Tidewater Oil Company of Spain, S.A., and another participant.

West Pakistan—During 1960 and early 1961 Tidewater was carrying on an extensive geological and geophysical program on concessions encompassing 7,000,000 acres. The Pakistan government is a participant in these operations.

Turkey—In Turkey, Tidewater, as as operator for a group, is exploring 2,700,000 acres. The group also contributed to a well drilled on offset acreage in Thrace.

Guatemala and Paraguay — Concessions in these countries, in which Tidewater had interests, have been terminated because exploration failed to produce results warranting further work.

Canada—Drilling by Tidewater in the Parkman Field in Saskatchewan has been notably successful in recent months and has added substantially to the company's crude oil reserves in Canada. Exploration work is being continued in Alberta.

Tidewater participated with others in the acquisition of 11,800,000 acres in the Northwest Territories and the Arctic Islands. Seismic evaluation is being carried on and stratigraphic test wells have been drilled.

Japan — Tidewater's affiliate in Japan is Mitsubishi Oil Company. Last year, construction was started on Mitsubishi's second refinery, located west of Osaka. The plant, which will go into operation later this year, has an initial capacity of 20,000 barrels per day, which can be readily expanded to 40,000 barrels per day.

The other refinery, at Kawasaki, has been operating at record levels of over 45,000 barrels per day.

The demand for petroleum products in Japan is growing at an unprecedented rate. The new refinery is being constructed to meet this demand and to expand Mitsubishi's share of the market.

Denmark—A new refinery (Denmark's first) is being constructed for Tidewater's Scandinavian subsidiary, Dansk Veedol A/S, at Kalundborg, about 60 miles west of Copenhagen. This refinery will have a capacity of 20,000 barrels per day and is being supplemented with marine terminal facilities capable of mooring supertankers and product carriers. Completion is scheduled for late 1961.

Everette A. Skarda has been appointed general manager of Dansk Veedol, replacing George M. Dixon, who is returning to a new assignment with Tidewater in the United States. A graduate of the University of California, Skarda has been zone manager of Getty Oil Company's Saudi Arabia-Kuwait neutral zone operations for the past four years.

Marine terminals have also been completed at other points in Denmark and at Moss Kambo in the Oslo Fjord, this latter for the distribution of products from the new refinery in Norway and Sweden.

UNION OIL COMPANY

Spanish Sahara — The hazards of exploration in foreign lands sometimes take an exciting and possibly tragic turn.

Eleven members of a United Geophysical Company crew under contract to Union to make seismic surveys in the desert area south of the Moroccan border were kidnapped recently by a roving band of tribesmen. Trucks and equipment were found wrecked and vandalized, but for more than a week it was impossible to determine the whereabouts of the men.

Happily on the 10th day following the raid King Hassen II of Morocco ordered the men released and they returned unharmed.

No attack was made on the camp, where Union's first African wildcat well, Daora 1-1, was drilling.

This well, spudded March 1, was drilling below 3,000 feet in early April. This will be a deep test, probably to 13,000 feet.

Australia — Union has a wildcat, Cabawin No. 1, in the Surat Basin of Australia which in April was drilling ahead in shale and sandstone at approximately 12,000 feet.

The Surat Basin is located in Eastern Queensland and New South Wales. The 40,000,000 acres in this block is larger than the entire state of Louisiana. This is a joint operation with Kern County Land Company. In early May completion of this well was announced, but results at this writing were inconclusive.

BOLIVIA

Bolivia California Petroleum Company, a subsidiary of Standard Oil Company of California, and Compania Petrolera Boliviana Shell, Ltd., has acquired by assignment from Alaska International Corporation five petroleum concessions covering 114,750 hectares in Petroleum Zone No. 1 in Bolivia.

The concessions are located approximately 50 kilometers east of the City of Santa Cruz and are adjacent to other concessions held by the two companies on which a well is now being drilled.

ARAMCO RECORDS

During the first two months of 1961, Arabian American Oil Company (Standard of Cal 30%) continued to make new records in the production of crude oil and in the daily average of crude oil processed at the Ras Tanura Refinery.

Aramco's total crude oil production for the period was 87,857,788 barrels, an average of 1,489,115 barrels per day. These figures compare with 73,984,687, or 1,233,078 barrels per day, produced during the same period in 1960.

Aramco processed 14,057,215 barrels of crude oil in these two months at the Ras Tanura Refinery, which is an average of 238,258 barrels per day. During a like period in 1960 a

total of 12,999,640 barrels was processed, or an average of 216,661 barrels per day.

COMMUNIST FAILURE IN MIDDLE EAST PREDICTED

George W. Ray, Jr., general counsel of the Arabian American Oil Company, speaking at the University of Texas Law School recently, had the following to say of disruptive communist propaganda in the Middle East:

"The Communists may continue their lambastic tactics designed to terminate the good relations existing between the guest companies and the host states. They, no doubt, will try to take over in the Middle East. But they will fail. Their domination, as in unforgotten Hungary, is a poor substitute for Arab freedom. Their collectives are a poor substitute for Arab expanding private enterprise, their atheism an unwanted blasphemy in Arab God-fearing lands, and their unkept promises a stench in contrast to Arab respect for contracts.

"The Arabs are keen traders — among the best on earth—and they will trade hard, as they have, for good contracts, and having won them, as they have, they will keep them."

Ray also predicted that efforts at price control by oil-producing countries would fail.

In discussing claims that a state has the unilateral right to alter or abrogate an economic development agreement such an oil concession, Ray declared:

"I say emphatically that there is no such thing in law as a sovereign right which gives to any state a legal justification for getting any individual or company to risk its capital and to use its skill in finding a natural resource and upon finding it, to develop it, and then when the arrangement turns out well for all concerned, to either set the arrangement aside or force its continuance under altered terms. Any state claiming such a right and endeavoring to exercise it will find to its sorrow that loss rather than profit will follow. It will lose its reputation for keeping its promises and with that loss will lose many of its customers, who, in order to plan their business operations, must have a dependable source of supply.

"Contracts are binding—binding in law, binding in morals, binding in common sense. The binding effect of Middle East development agreements has been challenged only by those who speak loosely for themselves. We hear nothing about unilateral alteration from the statesmen."

Ray pointed out that from the Aramco and other development agreements has come amazing progress for the Middle Eastern peoples. He stated that if the purpose of Saudi Arabia and other states in the area in making concession agreements included a desire to energize the economy, to enhance the productivity of the citizens and to raise their living standards, that purpose has been attained.

ARAMCO HEALTH FELLOWSHIP

Dr. John C. Snyder, dean of the faculty of public health at Harvard, has announced that Dr. Jiriar H. Arsenian, senior medical officer to the United Nations Relief and Works Agency in Jordan, has been named the first recipient of the recently established Aramco Fellowship. This fellowship offers tuition, living expenses and other fees to a qualified physician for one year of graduate study at the Harvard School of Public Health.

The purpose of the fellowship provided by Arabian American Oil Company is to assist in the improvement of health conditions in Saudi Arabia and the Middle East by preparing a basically trained physician for a career in public health and preventive medicine.

Cooperation between Harvard and Aramco in the interests of tropical health dates back to 1950, when the company became a member of the Industrial Council for Tropical Health, which in 1960 held its fourth conference at Harvard. Since 1954 Aramco and the Harvard School of Public Health have been conducting jointly a research program aimed at discovering a vaccine for the prevention of trachoma, the serious eye disease which afflicts many millions of people in the Middle East and other parts of the world.

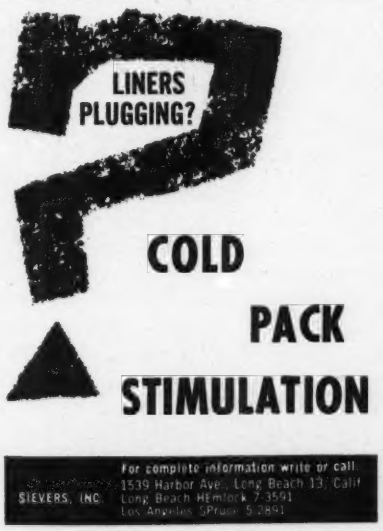
New Publications Announced By Division of Production, American Petroleum Institute

Well Testing

This handbook for use by operating personnel presents the reasons for well testing, the techniques and equipment used, and the part field personnel play in the entire process of determining and reporting well-performance data. Oil and gas well tests are described separately and in detail. Preparations and procedure for various types of tests are given, and function and construction of test equipment is outlined and illustrated. A series of appendices gives calculations and sample problems in measurement of gas volume by orifice meter, critical-flow prover, orifice well tester, Pitot tube, and irregular flow through orifice meter. The publication was written as a means of training field personnel and can be readily understood without benefit of technical background. Soft cover, 48 pages, 23 illustrations. Price $2.50 per copy, $3.00 foreign.

Performance Data on Hydraulic Fracturing Equipment (API RP 41)

This recommended practice provides a standard procedure for measuring, reporting, and certifying the hydraulic-horsepower rating of pumping units used in fracturing service. It is applicable to any type of fracturing unit regardless of model, size, or origin of engine, transmission and pumps. Procedure for preparation of engine, drive train, pumps, and measuring equipment is given and test procedure is described in detail. A sample form for presentation of performance (pressure-volume) curves is illustrated and an equation for calculation of hydraulic horsepower is given. Soft cover, 12 pages, price 50 cents per copy.



Statement of Stark Fox, Exec. Vice Pres., Oil Producers Agency of Calif. Before Senate Committee on Public Utilities Sacramento, May 19, 1961

My name is Stark Fox. I am executive vice president of Oil Producers Agency of California, an organization of independent producers of oil and natural gas in the state. On this occasion, I have also been authorized to speak for the San Joaquin Valley Oil Producers Association.

The two organizations I represent today wish first to express their appreciation of this opportunity to be heard on the subject of Senate Bill 1268, a bill which, if passed, will have grave and serious effects on the future and continued development of California's natural gas resources.

We are completely and unalterably opposed to legislation of the type proposed in S. B. 1268.

It would finally close the last small opening remaining for the producer of gas in California. Right now, he is almost entirely at the mercy of the gas public utilities. For all practical purposes, there are but two natural gas purchasers in the state—one in Northern California, and one in Southern California. It is solely up to these companies whether they buy or do not buy California gas. Both of them are exerting every effort to secure out-of-state supplies. They will use these supplies to capacity because, in general, the more they use the lower the unit cost. As a result, the prospect for sale of California gas is considerably dimmed.

This prospect will inevitably lead to a slackening of the recent effort to discover and develop natural gas resources in the state. This effort has been markedly successful during recent years, particularly in the Sacramento Valley, which saw the discovery of 42 new gas areas in 1960 alone. Some 189 exploratory wells were drilled to find these areas.

Right now, according to the State Division of Oil and Gas, there are 298 dry gas wells shut in out of a total of 928 capable of producing. They are shut in because the gas utilities refuse to purchase the gas they are capable of producing.

At the present time, the producer does have one remaining opportunity to dispose of his gas: He can join with his fellows, build a pipe line, and sell his gas to a consumer. If and when he does, he can continue to develop the natural gas resources of the state, to the benefit of the whole state and its economy.

If, on the other hand, S. B. 1268 is passed, he will be barred from disposing of his gas, and will thus be barred from producing it and developing further resources until it suits the whim of the gas public utility to buy it.

We believe that to hand over the control of development of the gas resources of California to two public utility corporations is distinctly contrary to the public interest.

We believe that the public's interest lies in the full development of the state's resources, and in their being put to beneficial use.

We believe that to close the last door of opportunity to the gas producer, namely to prohibit him from making a bona fide contract for sale of his gas to a bona fide consumer, is to deny him the right to exercise his own initiative in the conduct of a business which adds to the economic wealth and well-being of the state.

We believe that S. B. 1268 is self-serving legislation, for the benefit of one or two, and to the detriment of the many.

We urge, in the best interest of the state and its citizens, that you refuse to vote it out of committee.

Editor's Note:

The bill was referred to an interim committee for study, which means that no action will be taken on it in this session of the legislature.

It does not mean, however, that the subject of regulating gas pipe line construction has become a dead issue. Rather, it means that, in all probability, hearings will be held by the committee, which will file a report with its recommendations for legislation at the next general session of the legislature which will open in January, 1963.

The industry, therefore, still has the responsibility of presenting its case to the legislature.

Bill Requiring PUC Okay For Private Gas Pipe Lines Sent to Interim Committee

The California Senate Committee on Public Utilities during the week of May 15 referred to interim committee study SB 1268, which would have prohibited anyone but a natural gas public utility from building a gas pipe line without permission from the State Public Utilities Commission.

Felix Chappellet, WOGA general manager, testified in opposition to the bill and filed with the committee a resolution pointing out that (1) with the approval of the Public Utilities Commission, the public utility gas corporations will not act as common carriers of gas and are not required to purchase gas, and (2) that certain fields in California are now shut in because the public utility gas corporations do not purchase gas produced from them and the producers have no method of disposing of their gas.

Chappellet said that SB 1268 would have the effect of prohibiting oil and gas producers from constructing pipe lines to sell their gas to anyone except a public utility gas corporation.

Also appearing in opposition to the bill were Stark Fox, executive vice president of the Oil Producers Agency of California, and William R. Wardner, general manager of the Conservation Committee of California Oil Producers. The committee also heard from several gas producing companies and persons owning property leased to gas producers in the northern California area.

Representatives of the public utility gas corporations appeared in support of the legislation.

NEW LITERATURE

Literature Now Available Describing New Pacif. Chem. Pump

Pacific Perforating Co. Inc., Torrance, California, manufacturers of the new Pacific chemical pump, recently announced that descriptive literature is now available for those interested in this new, highly efficient, low-cost chemical pump.

For your free copy, write to Pacific Perforating Co. Inc., 1024 Engracia Avenue, Post Office Box 144, Torrance, California.

This is the most important seat in the country

Tom here, is discovering the atom.

But the most exciting discovery in the classroom could well be Tom himself.

For he's the owner of a bright, inquiring mind – and possible seeds of greatness.

His and other keen minds should be given the chance to develop their capabilities to the fullest... for the nation's very existence depends on their growth.

Today, industry is uniting with education to help provide this chance. For its part, Standard is investing $1,300,000 this year in scholarships, fellowships, research grants, direct aid to colleges and universities . . . teaching aids, educational broadcasts.

Industry's investment, we believe, will be returned many times over in enriched minds and improved technology.

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TEST

quality control tests make sure Youngstown line pipe won't fail in the field

Take the pipe and check the weld. Then crush an end. Burst a length. Pressure-test it hydrostatically. From ore to steel to final stenciled product, separate mechanical and visual inspections make sure Youngstown line pipe won't fail in the field.

Get Youngstown Electric Weld line pipe in sizes 6⅝" to 22" O.D. Get it in time and money-saving long lengths to 55 feet. Order Youngstown Seamless line pipe in sizes 2⅜" to 14" O.D., Continuous Weld line pipe in sizes ⅛" nominal to 4½" O.D. Get it fast, when and where you want it, through Youngstown District Offices, through any one of 900 independent pipe distributors.

Count on Youngstown for line pipe you can depend on. For gas and oil gathering, transmission and distribution lines. For product lines from petrochemical plants and refineries. For quality pipe wherever line pipe is needed. You get value and performance when you buy line pipe from Youngstown, world's second largest pipe producer.

Youngstown – growing force in steel

For complete information about Youngstown line pipe, write Dept. 18-B,
The Youngstown Sheet and Tube Company, Youngstown, Ohio.

Steel

INTERNATIONAL GUESTS at the May 10, 1961, meeting of the Los Angeles Chapter of Nomads. Left to right: (front row) Earl R. Hughes of Iraq Petroleum Co. from Iraq; Frank E. Redd of Dhofar Cities Service from Arabia; Hugh D. O'Neil of Petrobras from Brazil; (back row) Cal Parker of Santa Fe Drilling from Burma; Albert Jensen of Drilexco from Portuguese Guinea; Wm. M. Hendricks, ex K & C in London.

NEWLY ELECTED 1961-62 OFFICERS for API Division of Production, Pacific Coast District. Left to right: Lester Neblett, Standard Oil Co. of Calif., vice chairman, Coalinga-Kettleman Area; F. M. Kalenborn, Standard of Calif., vice chairman, San Joaquin Valley; J. B. Hundley, Jr., Richfield Oil Corp., district chairman; Mrs. Elsie Edmiston, American Petroleum Institute, secretary; C. R. Ball, Ball & Black Supply Co., treasurer; G. L. Laurent, Standard Oil Co. of Calif., advisory committee chairman; and Harold Boyd, O.C.O. Tool Co., vice chairman, Coastal Area. Not shown above are R. A. Malott, Shell Oil Co., vice chairman, advisory committee; and J. M. Billings, vice chairman, Los Angeles Basin.

Pacific Section, A.A.P.G. Luncheon Meeting

Dr. Cordell Durrell, professor of geology, University of California, Los Angeles, addressed the regular luncheon meeting of the Pacific Section, A.A.P.G. The topic for Dr. Durrell's talk was "Landscapes of Northeastern Brazil."

The luncheon was held June 1 in the Rodger Young Auditorium, Los Angeles.

CITATIONS FOR SERVICE to the API were awarded at the recent Pacific Coast District Meeting to (l. to r.): R. B. Hodgson, Tidewater Oil Co.; R. H. Newman, Long Beach Oil Development Co.; E. E. Embury, The Guiberson Corp.; Floyd E. Schoonover, Monterey Div., Humble Oil & Refining Co. Awards were presented at the banquet session by Gage Lund, Standard Oil of Calif., production vice president of the API.

Coalinga-Kettleman Chapter Of API Holds BBQ

The Coalinga-Kettleman Chapter of the API met May 17 in the Polvadero Country Club with chairman Les Neblett presiding.

The 109 in attendance enjoyed a barbecued New York steak dinner.

The guest speaker of the meeting was Gus Zernial, a former major league professional ball player. His talk dealt with humorous stories and various other aspects of major league players.

A colored film was shown of the 1960 New York Yankee and Pittsburgh Pirates World Series. This was followed by a question and answer bull session with Mr. Zernial.

The next barbecue will be September 20.

In the Forefront of New Drilling Advancements . . .

THE SHAFFER ROTATING BLOWOUT PREVENTER

You probably saw the following news item featured in recent technical articles. In it a key role was played by the Shaffer Rotating Blowout Preventer—the blowout preventer that makes possible a wide range of new savings and efficiencies in modern drilling and production techniques . . .

TYPE 50

NEW DEPTH RECORD For Air-Drilling Holes Set at 18,500 FEET!

A West Texas well, bottomed at 18,500 feet, exceeded by some 2,580 feet the former record depth established by air drilling equipment. Inasmuch as the top portion of the hole was drilled with conventional fluid circulation, and the lower portion was drilled with air circulation, some interesting comparisons are available.

For example, the data shows that both the penetration rate and the bit life increased substantially with air drilling as compared to fluid drilling. However, variations in formations at the different depths make these figures interesting but not directly comparable . . .

During air drilling, continuous pressure control was maintained with a Shaffer Rotating Blowout Preventer. Rig report states: *"No pressure control problems were encountered while this equipment was in use."*

Average Penetration Rate:
. . . with fluid, 39 ft. per day.
. . . with air, 153 ft. per day.

Average Bit Life:
. . . with fluid, 68 ft. per bit.
. . . with air, 672 ft. per bit.*

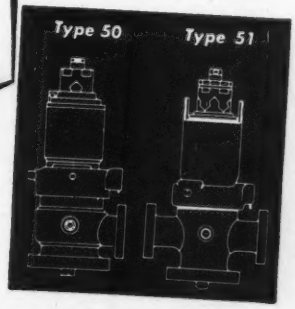
Longest Bit Run:
. . . with fluid, 265 ft.
. . . with air, 1,051 ft.*

(**Note:* The insert type bits used for air drilling cost about 5 times that of conventional rock bits, but averaged about *10* times the footage. Net difference, approximately 2 to 1!)

Available in two types...

Type 50 for drilling through 10¾" casing or larger.

Type 51 for slim-hole drilling, drilling-in, production and re-work operations.



There is no other pressure control equipment available that will handle the range or type of applications that are routine for The Shaffer Combination Rotating Blowout Preventer and Stripper.

- Here's a unit that *automatically* maintains continuous pressure seal around the drill string as long as the string is in the hole. No special drill string equipment is needed!
- The Stripper Rubber expands and contracts automatically to seal around the varying diameters of pipe, couplings, tool joints and drill collars as they pass through the unit!
- The Stripper Rubber also adjusts automatically to fit the varying *shapes* of different drill string elements—square, hexagon or octagon kellys as well as cylindrical or out-of-round shapes of pipe, couplings, tool joints and drill collars!
- The seal remains pressure-tight whether the drill string is stationary, is being rotated, or is being raised or lowered!
- The steel-reinforced Stripper Rubber is so designed that the higher the pressure the tighter the seal. Varying pressures are compensated for *automatically!*

The Shaffer Rotating Blowout Preventer is ideal for regular drilling . . . for drilling under pressure . . . for drilling with reverse circulation . . . and for drilling with air or gas instead of mud.

Shaffer Bulletin #1003 contains complete information on this unique blowout preventer. Your nearest Shaffer representative will gladly supply complete details. Or write direct!

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Personalities IN THE NEWS

Olen Lane

Olen Lane Retires

Olen Lane, Los Angeles, vice president of Continental Oil Company, who spent all but one year of his 38-year career with Conoco in Los Angeles, retired May 31 under the company's retirement annuity plan.

Active in Los Angeles civic life and a West Coast petroleum industry leader for many years, Mr. Lane joined Conoco's land department in Oklahoma, his native state, in 1922. He transferred to Los Angeles the following year as a landman and became head of the western region land department in 1929.

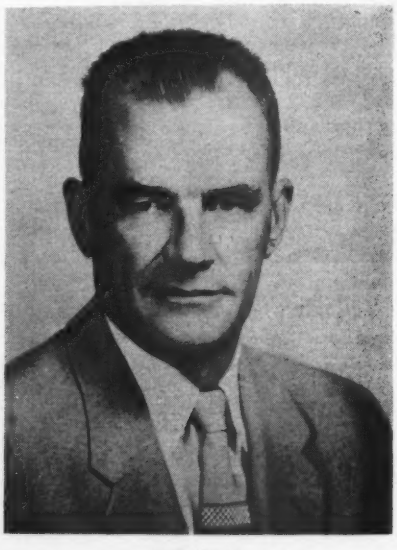
Named regional production superintendent in 1946, he became exploration manager here four years later and assistant general manager of the western region in 1950. He was promoted to general manager of the company's western region in 1953, continuing his headquarters in Los Angeles, and was elected a vice president of Continental later that year.

Mr. Lane is a past president of the Los Angeles Petroleum Club and served as president of the Western Oil and Gas Association in 1959. During retirement he will continue to reside at 1661 Valley View Road in Glendale.

Petrolite Names A. J. Fox Eastern Hemisphere Sales Manager

A. J. Fox, assistant to sales manager of Tretolite Company division of Petrolite Corporation, has been named sales manager for Petrolite Limited, Eastern Hemisphere division, and will be located at the company's London, England, headquarters.

Fox will direct sales and service operations for the company in Europe, the Middle East, and the Far East, where Tretolite oil industry chemicals and Petreco processes and equipment are made available, according to **W. J. Nuelle,** vice president of Petrolite Corporation and division manager of Petrolite Corporation, Eastern Hemisphere division.



J. E. Clark

Prior to becoming assistant to **James E. Stockton, Jr.,** sales manager of Tretolite Company, Fox served as assistant Latin America division manager at Maracaibo, Venezuela. A graduate of Texas Technological College, Fox was with Magnolia Pipeline Co. before joining the Tretolite Company division in 1954 as a sales and service engineer.

Denis B. Kemball-Cook

Shell Oil Co. Promotes Kemball-Cook and Clark

Denis B. Kemball-Cook has been named executive vice president to direct and coordinate marketing, manufacturing, purchasing stores and transportation and supplies for Shell Oil Company, with headquarters in the company's New York office.

Currently a director of the company and executive vice president in charge of exploration and production, Kemball-Cook will be succeeded by **J. E. Clark,** a native of Ventura

and a graduate of Stanford University.

Clark joined Shell in 1932 and for a time was manager of the company's Coastal Division, with headquarters at Ventura. Since 1958 he has been vice president in charge of production.

Monroe E. Spaght, Shell's president, said Kemball-Cook also will act as the president's deputy and that these appointments become effective July 1.

F. C. Schulze

F. C. Schulze Named Waukesha Motor Company Sales Vice President

F. C. Schulze has been advanced to the post of vice president of sales for the Waukesha Motor Company. The announcement was made by **C. E. Nelson,** president, following a recent meeting of the company's board of directors. Schulze had held the position of general sales manager since 1949. Vice president of sales Schulze will direct and coordinate the motor company's sales efforts throughout the country and in foreign markets.

He has many years of experience in the sale and application of internal combustion engines and related products, and has a wide acquaintanceship with engine-powered equipment manufacturers, and the owners and users of such equipment.

Schulze is well versed in all phases of the engine building industry. When he joined Waukesha Motor Company in 1928, he began a career that afforded him practical experience in major divisions of the company's activity, from manufacturing through purchasing, plant maintenance and sales. After his first years in the sales department, where he held positions of increasing responsibility in the home office, he transferred most of his attention to the problems and opportunities in the direct sale of engines to the manufacturers of various types of power-driven equipment. He was named assistant sales manager in 1938 and general sales manager in 1949.

Dr. Mayuga Appointed Chief Petroleum Engineer of Long Beach

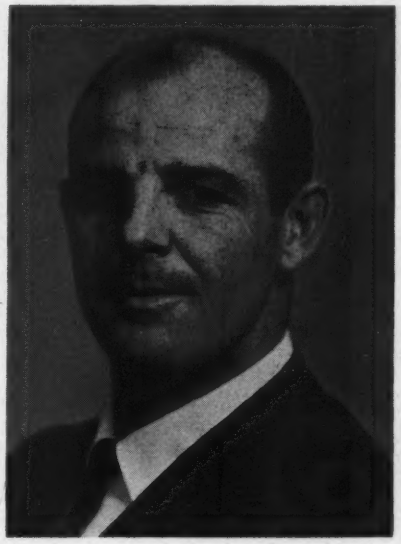
Dr. Manuel N. Mayuga has been appointed chief petroleum engineer for the Port of Long Beach, the Long Beach Harbor Commission announced on May 22.

For the past year Dr. Mayuga has been assistant chief petroleum engineer for technical services. He began his career with the Long Beach Harbor Department in 1948 as principal geologist, serving in that position until April, 1959. He left the harbor department for one year to head up three groups of scientists working on a classified U. S. Air Force satellite project at the Ramo-Wooldridge Corp.

Dr. Mayuga received his B.S. in mining engineering in 1938 at the University of Arizona. He also earned his M.S. in geology (1940) and his Ph.D. in geology (1942) at the same institution. He is a registered professional petroleum engineer in the state of California. He was a petroleum engineer and geologist with the Long Beach Oil Development Co. from 1946-48.

A Lt. Colonel in the U. S. Air Force, Dr. Mayuga was in both World War II and the Korean conflict, serving in the former as staff intelligence officer under General George C. Kenny, Far East Air Force Headquarters. During the Korean conflict he was recalled to active duty and served as Chief of the Photo Intelligence Section at the Pentagon. During this period he was also the Air Force's representative to the Panel in Geology and Geophysics of the Research and Development Board, Department of Defense.

A member of many professional and civic organizations, Dr. Mayuga is vice president of the Downtown Long Beach Lions Club.



E. C. McKnight

E. C. McKnight District Salesman For Johnston Testers

Appointment of **E. C. McKnight** as district salesman for Johnston Testers was announced by **B. R. Dixon,** vice president in charge of operations. McKnight will cover the Ventura, California, area.

A native of Colorado, McKnight is a graduate geologist from the University of Utah. Prior to joining Johnston, McKnight had spent nine years as a geologist with Standard Oil Company of California.

Originators of drill stem testing more than 33 years ago, Johnston Testers is the largest oil field service organization concentrating on downhole formation testing. The firm also offers a tool for the well completion services of fracturing, acidizing, squeezing and testing. Johnston has four sales and service locations in the California area.

A. A. Sylvester Promoted By Grant Oil Tool Co.

Grant Oil Tool Company announces the promotion of **Anthony A. Sylvester** to secretary treasurer. Sylvester joined Grant in 1953 as chief accountant and office manager. He is chairman of the Oil Field Division and member of the board of directors of the Credit Managers Association of Southern California.

Summary of District V Oil Industry Conditions March (and April Preliminary) 1961

By OIL PRODUCERS AGENCY OF CALIFORNIA

Highlights

Continued importation of residual fuel, at a rate of 56,000 b/d, marked the March report of the U. S. Bureau of Mines, "The Petroleum Situation in District V."

These imports, none of which occurred prior to 1960, have grown from an average of 18,000 b/d in that year to a first quarter average of 60,000 b/d in the current year. Even with this added supply, however, residual fuel stocks decreased 1,218,000 barrels since December 31, 1960.

During March, withdrawals from inventories of gasoline, distillates, and residual fuel offset an increase in crude stocks, with the result that total stocks decreased 673,000 barrels.

A U. S. Bureau of Mines estimate for April based upon weekly U. S. Bureau of Mines and American Petroleum Institute reports, follows. Also included is a comparison of 1961 first quarter results with those of the 1960 first quarter.

Total Supply, Demand, and Stocks

Preliminary figures for April indicate that total supply was 1,385,000 b/d, demand was 1,462,000 b/d, and stocks decreased 77,000 b/d. This decrease, 2,310,000 barrels for the month, would bring stocks to 111,735,000 barrels on April 30, compared with 120,024,000 on April 30, 1960. The year's decrease would be 8,289,000 barrels.

First Quarter Comparisons

Total supply averaged 1,424,000 b/d during the first quarter 1961, an increase of 87,000 b/d or 6.5% over supply of 1,337,000 b/d in the like 1960 period.

First quarter 1961 demand was 1,432,000 b/d, up 23,000 b/d or 1.6% from the 1960 first quarter average of 1,409,000 b/d.

Total stocks decreased 740,000 barrels during the first three months of 1961, against a decrease of 8,790,000 barrels in the first quarter of 1960.

Crude Production, Imports, and Stocks

Weekly figures for April indicate that crude production was 838,000 b/d, imports were 273,000 b/d, and stocks dropped 25,000 b/d. This decrease, 750,000 barrels for the month, would bring crude stocks to 31,421,000 barrels on April 30, compared with 33,790,000 on April 30, 1960. The year's decrease was 2,369,000 barrels.

Gasoline Supply, Demand, and Stocks

Weekly figures for April indicate that gasoline supply was 583,000 b/d, demand was 667,000 b/d, and stocks decreased 84,000 b/d. This decrease, 2,520,000 barrels for the month, would bring stocks to 29,323,000 barrels on April 30, compared with 35,405,000 on April 30, 1960. The year's decrease would be 6,082,000 barrels.

First Quarter Comparisons

Gasoline supply averaged 573,000 b/d in the first quarter, off 15,000 b/d, or 2.5%, from the 588,000 b/d level of the first quarter 1960.

Gasoline demand also was off—from 578,000 b/d in the first quarter 1960 to 570,000 b/d in the like 1961 period, a drop of 8,000 b/d, or 1.4%.

Gasoline stocks increased 277,000 barrels in the first quarter 1961 against an increase of 970,000 in the corresponding 1960 period.

Distillate Fuel Supply, Demand, and Stocks

Preliminary figures for April indicate that distillate supply was 173,000 b/d, demand was 202,000 b/d, and stocks dropped 29,000 b/d. This decrease, 870,000 barrels for the month, would bring stocks to 13,102,000 barrels on April 30, compared with 12,278,000 on April 30, 1960. The year's increase was 824,000 barrels.

First Quarter Comparisons

During the first quarter of 1961, distillate fuel supply averaged 217,000 b/d, an increase of 11,000 b/d, or 5.3%, over the average of 206,000 b/d in the like 1960 period.

First quarter 1961 demand for distillates was 226,000 b/d, up 5,000 b/d, or 2.3%, over the 221,000 b/d average in the 1960 first quarter.

Distillate stocks decreased 854,000 barrels during the first three months of 1961, compared with a decrease of 1,438,000 barrels in the like 1960 period.

Residual Fuel Supply, Demand, and Stocks

Weekly figures for April indicate that residual fuel supply was 309,000 b/d, demand was 280,000 b/d, and stocks increased 29,000 b/d. This increase, 870,000 barrels for the month, would bring stocks to 14,103,000 barrels on April 30, compared with 14,481,000 on April 30, 1960. The year's decrease was 378,000 barrels.

First Quarter Comparisons

First quarter 1961 residual fuel supply averaged 337,000 b/d, 51,000 b/d or 17.8% higher than the average of 286,000 b/d in the first quarter 1960.

Demand for residual fuel was 351,000 b/d in the 1961 first quarter, 21,000 b/d or 6.4% higher than the 330,000 b/d average of the first quarter 1960.

Residual fuel stocks decreased 1,217,000 barrels in the first quarter 1961, compared with a decrease of 4,005,000 barrels in the like 1960 period.

Natural Gas Supply, Consumption

In March, consumption of natural gas was 3,751,000 mcf per day, out-of-state supply was 2,371,000 mcf per day and California supply was 1,380,000.

New Well Cleaner Introduced by Hagan

Hagan Well Cleaner C-2 for use in cleaning oil field producing wells, injection wells, filters, heater treaters, pumps and lines, has been introduced by Hagan Chemicals & Controls, Inc., Pittsburgh, Pa.

Well cleaner is a 100% active, granular mixture of solid acid, corrosion inhibitors and demulsifiers.

It removes carbonate "gyp" scale and loosens deposits of calcium sulfate, iron oxide, magnesium silicate and other deposits bound by calcium carbonate.

The cleaner can be added dry to the well and washed down with water, or can be first mixed with water.

Advantages of dry powder Hagan Well Cleaner C-2 are its greater safety and ease of handling and its lower handling costs because no special storage is required. Also, there is no danger of fire, toxic fumes or explosion.

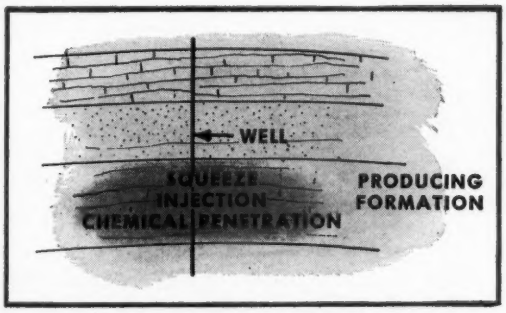
For more information, write the Oilfield Division, Hagan Chemicals & Controls, Inc., Hagan Center, Pittsburgh 30, Pa.

Visco Squeeze Treatment Chemicals Designed to Fit Varying Well Conditions

Corrosion Control Lasts, Costs Less with New Visco Formulas, Methods

Squeeze treatment in producing wells continues to grow in importance as an economical, long-term method of obtaining effective corrosion control. It is simply the pressure injection of corrosion inhibitor chemical into the producing formation, from which it is released in approximate proportion to produced fluid volume over a period of time—anywhere from two to sixteen months.

Visco has found squeeze treating of sufficient interest to producers to justify development of specialized chemicals and techniques to permit most effective use of the method.



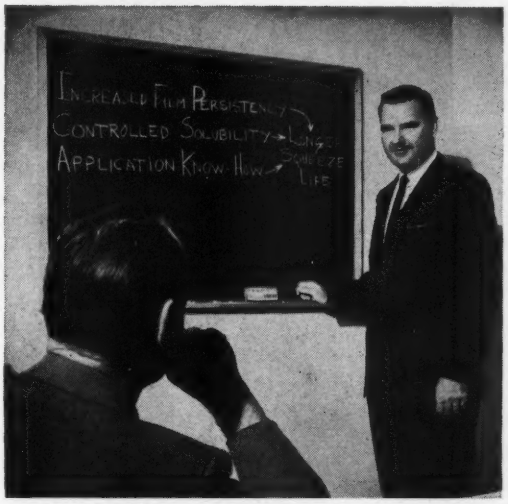
Squeeze technique forces chemical corrosion inhibitor into formation around well bottom. Chemical is carried back with produced fluid. The excellent film persistency of Visco squeeze treating chemicals assures long-lasting, low-cost well protection.

Effects of Formation

Producing formation composition, porosity permeability and position can have an important bearing on the success of squeeze treatment corrosion control . . . They are important considerations in the development of special Visco formulas for this purpose.

Determining Chemical Type

As with any operation affecting producing formations, experience is the most dependable guide. Chances are great that the conditions you have in your area have been closely paralleled by other Visco squeeze treating experience. Further, Visco Formulas such as



Visco's P. H. Mallette, Product Manager for Corrosion Control Chemicals, discusses factors considered important in assuring effective squeeze treatment.

new 939, 956, and 990, were developed to broaden the effectiveness of corrosion control with squeeze treatment, and so are a big help in pinpointing the best chemical and method to apply to specific well characteristics.

Field Experience

Squeeze treating can offer some substantial cost and time advantages for effective corrosion control in many types of producing wells . . . BUT, probably more than any other treating method, squeeze treatment demands skill and experience, as well as effective chemicals, to assure success. No one is better equipped than Visco . . . *we* firmly believe no one else can do as well for you.

Help, Now

Visco action toward being useful in your activities is as close as your phone—and nearly as quick as picking it up. Your move.

VISCO PRODUCTS COMPANY
Incorporated
A subsidiary of Nalco Chemical Company
1020 Holcombe Boulevard **Houston 25, Texas**
Deutsche Nalco-Chemie, G.m.b.H., Frankfort, Germany
Nalco Italiana, S.p.A., Rome, Italy
Nalco de Mexico, S.A. de C.V., Mexico, D.F., Mexico
Nalco de Venezuela, C.A., Caracas, Venezuela
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Lufkin Announces New Pumping Unit

Lufkin Foundry and Machine Company, Lufkin, Texas, announces the consummation of an agreement with Oilfield Equipment Corporation of Denver, Colorado, wherein Lufkin procured complete manufacturing and distribution rights to the revolutionary design of a sucker rod pumping unit known as the Mark II.

Mark II Sucker Rod Pumping Unit

A key feature of this new pumping mechanism is the uniform torque loading, which has been a target of all pumping unit manufacturers for many years. This unique Mark II mechanism affords a near uniform torque loading with very low peaks, which is not only beneficial to both gear reducer and prime mover, but in many cases reduces their size requirement.

Lufkin Foundry and Machine Company has redesigned this mechanism for simplicity and ruggedness.

Additional Mark II features include a desirable walking beam motion.

The unit is immediately available in a 160,000 pound inch torque gearbox in four models, 74" stroke, 20,000-pound polished rod load; 86" stroke, 20,000-pound polished rod load; 74" stroke, 24,600-pound polished rod load; and 86" stroke, 24,600-pound polished rod load.

Dowell Uses Sodium Silicate to Stop Leaks

New literature has just been issued by the Dowell Division of The Dow Chemical Company on the use of sodium silicate to stop tubing leaks in gas wells. These leaks, which are most often at the collars, let excess pressure build up on the casing and this material is highly successful in furnishing a hard, glassy coating which seals pinholes and thread leaks.

According to Dowell, this Sodium Silicate Service has achieved a high degree of success in stopping tubing leaks. Compared to a rework job, the cost of this service is low, inasmuch as it is not necessary to pull the tubing to use the service.

For more information, including case histories, write Chad Steward, advertising manager, Dowell Division of The Dow Chemical Company, P.O. Box 536, Tulsa, Okla.

Super High Pressure Hose Assemblies

New illustrated brochure contains detailed specifications and engineering information on super high pressure hose assemblies in sizes from ½" through 2" with burst pressures up to 45,000 PSI. Assemblies are now available in standard lengths or to specifications from stock on the Pacific Coast by Eastman Pacific Co.

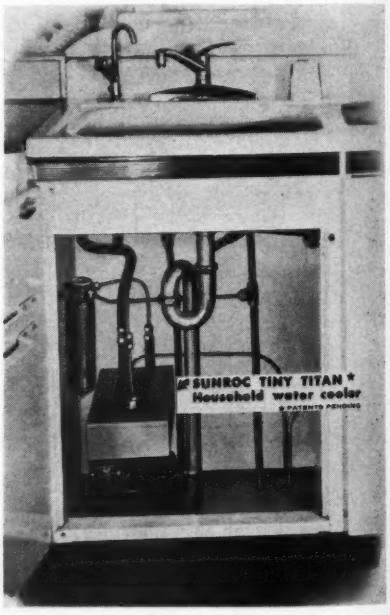
Interchangeable Process Pumps

Byron Jackson Pumps, Inc., has just published an 8-page bulletin describing a completely new line of process pumps. It shows how 72 basic combinations allow a choice of features for the service required. It is available from Byron Jackson Pumps, Inc., P.O. Box 2017-A, Terminal Annex, Los Angeles 54, Calif.

Keenan Pipe & Supply Co. Distributor of Water Cooler

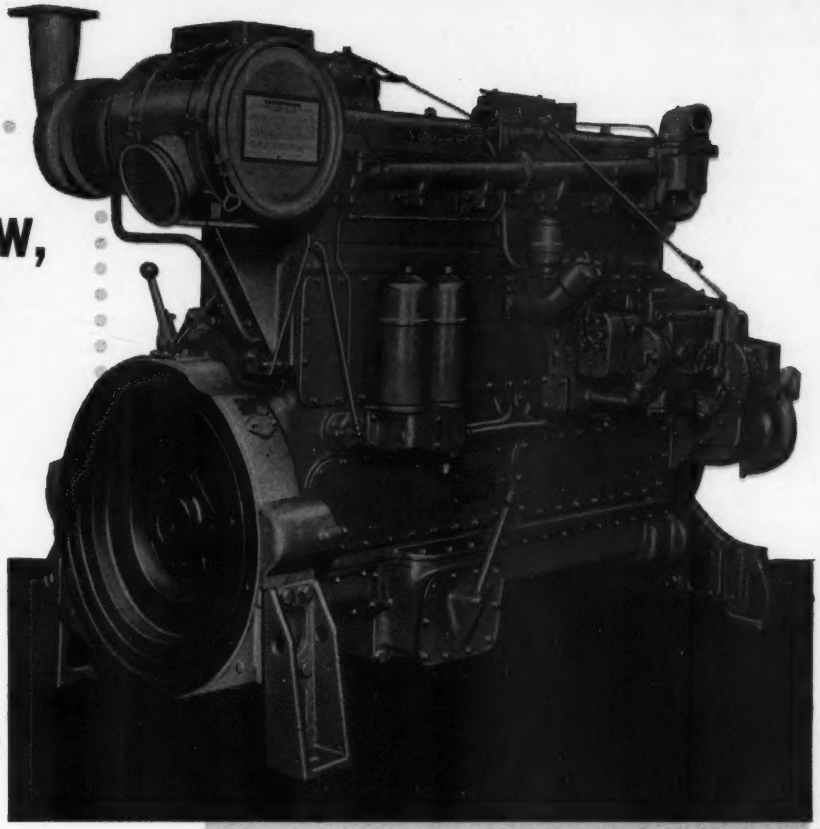
A revolutionary new small water cooler—the Sunroc Tiny Titan—distributed in the Southwest by Keenan Pipe & Supply Co., has been developed to fit in any small area under a sink, counter, or similar location where it can be hooked up to existing water and drain lines. The Tiny Titan is furnished with an attractive chrome-plated glass filler that is easily installed on any convenient point-of-use location selected for dispensing the refrigerated drinking water for small businesses, apartments, and homes.

The Sunroc Tiny Titan has a water-cooled condenser which permits installation without disturbing or affecting other built-in appliances. Even in confined, closed areas, it operates at peak efficiency without discharging any hot air.



Additional details and complete literature are available from Keenan Pipe & Supply Co., 2112 East 27th Street, Los Angeles.

Get this new, Heavy-Duty CAT® Gas Engine FREE!



You don't have to be a lucky contest winner to own this new CAT without COST! How? It's simple... Besides lower original cost per usable h.p. records show that modern CAT gas engines operate up to 20% more economically than others... in most cases, *savings in fuel alone repay the complete cost of your CAT engine before its first overhaul!*

WHY CATS USE LESS FUEL

Most engines must operate at derated outputs to obtain acceptable life. By operating at lower ratings, fuel consumption per h.p. delivered goes up! But new CAT gas engines are built with an extra wide margin of safety. Design is based on the modern, rugged CATERPILLAR diesel. This means these engines tolerate high compression ratios and easily operate continuously at their most efficient loadings.

Result? Just check the fuel consumption rates at right... Note CAT savings. Let these fuel savings pay for your CAT engine and be money ahead in the years to come.

Fuel Consumption in BTU/HP—HR

Manufacturers' Recommended Continuous Loading	Engine A	Engine B	CAT G-342	Savings/year with CAT using 30¢ MCF fuel	Savings/year with CAT using 60¢ MCF fuel
150 HP	9,100	10,300	8,100	$395.00	$790.00
200 HP	9,900	10,500	8,500	$735.00	$1470.00
235 HP	10,500	10,400	8,500	$1180.00	$2360.00
280 HP	10,300	10,300	8,600	$1260.00	$2520.00

All data compiled from manufacturers' published literature.
Where only full load fuel consumption indicated, 5% added to get continuous rates.
All figures listed in gross heat value.
All engines with radiators and fan.

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Now You Can Acidize Without Corrosion

A new acid solution that is as much as 945 times less corrosive than hydrochloric acid can save at least 24 hours of rig time when used as a completion and perforating fluid, and removes downhole scale without damaging tubing, pump and rods left in place.

Name of the product is Multiple Service Acid, or MSA. It is a Halliburton Company product that by April 1st had six months of field use in more than 200 wells.

Research chemists from the Halliburton Laboratory, who developed MSA, report that its major advantage is a very low corrosion rate, permitting the acid to remain inside a well for three or more days with virtually no damage to metal.

A typical use of MSA in completion involves displacing the top cementing plug with at least 250 gallons of MSA, followed by sufficient water, brine or mud for displacement. After the plug is seated and until the cement is set, the acid remains in place. Its very slow reaction rate causes virtually no damage to the production string, even when wells have bottom hole temperatures above 250°F. For the subsequent perforating or WSO work, MSA is an ideal fluid. MSA does not attack the guns, wirelines or testing tools in these operations and is an ideal fluid to have present during the perforating.

MSA can be "weighted" to 86 lbs./cu. ft. to keep it across the desired area. With MSA opposite the formation when the perforating occurs, each perforation will be readily filled with the MSA rather than mud or drilling fluids which could temporarily block fluid entry through the perforation.

Another important use for MSA is removing carbonate scale without disturbing or damaging tubing, pump and rods. Many California wells are found to contain heavy scale deposits, which greatly impair the wells' productivity. It is sometimes difficult to remove this scale without going into a major remedial operation. Acid solutions such as hydrochloric acid, even though well inhibited, create problems. After descaling a well with hydrochloric acid it becomes imperative to use an acid-resistant pump. Chrome-plated parts are not damaged with MSA even during prolonged periods of contact time. Some crudes are found to "sludge" when contacted with hydrochloric acid, whereas the MSA will generally be compatible with the formation fluids.

Present indications are that MSA should be considered as an acidizing fluid in all wells having BHT of 250°F and above because of its very low corrosive action on all types of pipe and its "non-sludging" characteristics with the crude oils. MSA should also be considered for use on water disposal and water flood projects to remove scale without slowing down or interfering with water injections.

MSA reacts more slowly to achieve deeper, more even penetration than an equivalent volume of conventional acid. It will continue to react for an extended period of time. Thus permeability may be increased as the acid enters formation while it is stationary and as it is withdrawn from the formation. Laboratory tests also indicate that MSA can suspend formation fines. With conventional acid, these fines would tend to remain in the formation and may obstruct the flow channels.

"MSA is probably not the final answer in acidizing," according to Harry P. Conroy, Halliburton's vice president in charge of field operations. "But its remarkably low corrosion rate, which is non-existent for all practical purposes, makes it one of the most flexible acidizing solutions available."

Crestmont Oil Makes Deal in Texas

Crestmont Oil Company, a division of Crestmont Consolidated Corporation, has concluded an agreement with Fremont Valley Lands, Inc., for the exploration and drilling of oil and gas wells in the north Texas area, Crestmont president Carl T. Long announced recently.

Under the agreement, Crestmont Oil Company will drill and operate the completed wells, while Fremont will supply all of the working capital.

Long stated that the plans for the balance of 1961 call for the drilling of at least seven wells, all on Crestmont's north Texas leases. The first such well, the Nannie Greenwood Well No. 1, was completed last week and is flowing at the rate of 154 barrels a day through a 24/64" choke. Mr. Long said that a second well, the B. W. Cooper Well No. 1, has been started.

Crestmont Consolidated operates gas-gathering systems in south Texas, drills oil and gas wells in California and Texas, and in addition, through its electronics division, designs and manufactures instruments and controls.

Standard Oil of Calif. Western Operations Will Build Refinery in Alaska

Standard Oil Company of California, Western Operations, Inc., will construct the first major oil refinery in the state of Alaska on a site in the Kenai Peninsula area.

Announcement of the project was made through local company representatives by H. G. Vesper, president of Standard—Western Operations. The new plant will have a capacity of 20,000 barrels a day.

Vesper confirmed the company is negotiating for purchase of several hundred acres suitable for the refinery site. Engineering details and the date for start of construction are still under study and will be made public at a later date, he said.

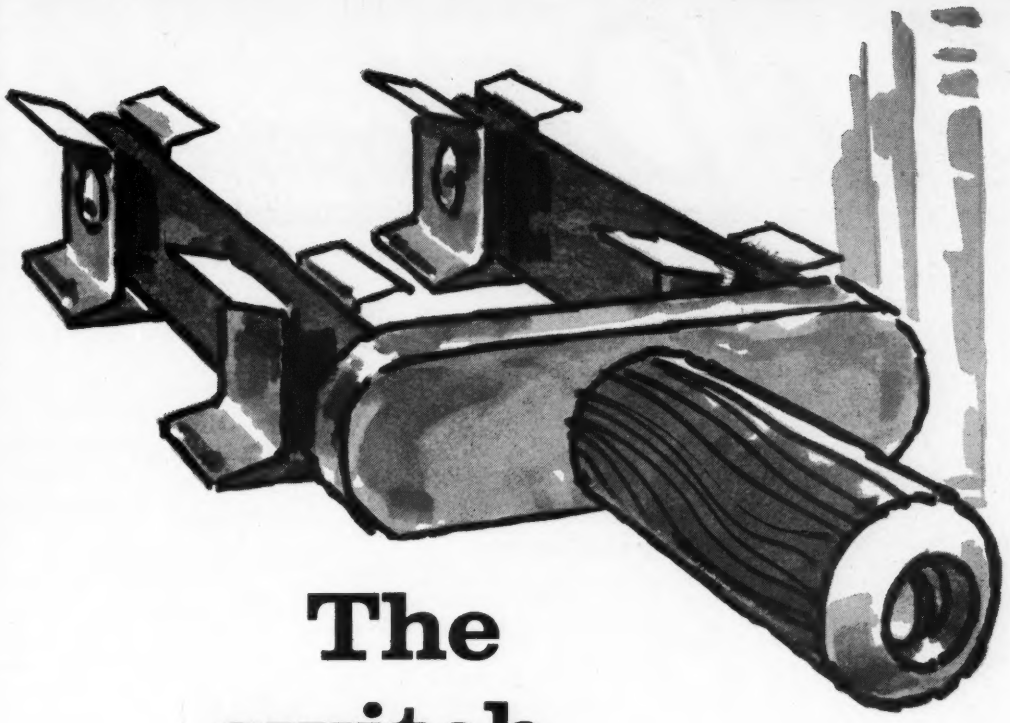
Construction of the new plant will enable Standard to serve the Alaska market more conveniently and effectively and to meet growing petroleum requirements of the state, Vesper commented.

"Our plans to build this refinery reflect the company's confidence in the future development of Alaska and its oil industry," he declared.

"This will be an up-to-date installation, manufacturing quality products from the outset," he said, "but it will also be designed to permit ready expansion when that is justified by growth in Alaska's oil consumption."

Vesper pointed out the plant will make an important contribution to the economy of the area, providing permanent employment on completion as well as temporary jobs during construction.

Local labor and suppliers will be utilized to the fullest extent possible, he said.



The switch is on...

to electric oil well pumps

The trend in Southern California oil fields is toward electric oil well pumps. Small wonder:

Electric Pumps are dependable—fewer moving parts reduce the chance of breakdown and require less maintenance.

Electric Pumps are safe—they eliminate the fire and explosion hazards of combustion engines.

Electric Pumps are economical—automatically controlled, they require less supervision and save you labor costs.

Electric Pumps are quiet—in a residential area, their silent operation contributes towards better community relations.

These are just some of the reasons why progressive oil producers in Southern California are switching to electric pumps. For the complete story, call any Edison office. One of our power consultants will be glad to furnish you details. There's no obligation, of course.

SOUTHERN CALIFORNIA Edison COMPANY

Field Development

LOS ANGELES BASIN

Union Oil Wildcat

Union Oil Company is preparing to drill Union-Signal-Murphy No. 1 located on the northeast quarter of Section 2-2s-14w at the southeast intersection of Adams Boulevard and Gramercy Place. Location of the test falls two miles southeast of the discovery well of the Las Cienegas Field, completed in June, 1960, by Union Oil Company of Calif. and Signal Oil & Gas Co.

Riverside County Wildcat

Edgington Oil Refineries, Inc., is preparing to spud Pipkin No. 1 located on the southwest quarter of Section 34-3s-7w. The wildcat is in the Corona area and will be drilled to about 4500 feet.

Culver City Wildcat

Standard Oil Company of Calif. has staked location for Culver City Unit No. 101 a short distance north and east from the intersection of Overland and Virginia Avenues on Section 7-2s-14w. The proposed depth of the well is approximately 10,500 feet. Surface location of the well falls about fifteen feet south from the Continental Oil Company's Culver City Unit B-4 No. 1 well, abandoned at a total depth of 10,358 feet.

Mar Vista Drilling Districts

Continental Oil Company and Socony Mobil Oil Company, Inc., have petitioned the City of Los Angeles to create three new drilling districts in the Mar Vista area, as follows:

District 1—Bounded by Charnock Road, McLaughlin Avenue, Washington Place, and Inglewood Boulevard.

District 2—Bounded by Palms Blvd., Inglewood Blvd., Venice Blvd., and Colonia Avenue.

District 3—Bounded by Palms Blvd., Colonia Ave., Venice Blvd., Moore St.

Each district has approximately 130 acres.

Texaco Deep Test

Texaco Inc. is preparing to drill Clanton No. 1 located on the northwest quarter of Section 28-3s-11w, approximately three miles south of the Santa Fe Springs Field. The test will be drilled to about 13,000 feet.

SAN JOAQUIN VALLEY

New Field Discovery

Signal Oil and Gas Company completed Signal Unit No. 1-16X as a new field discovery flowing 65 b/d of 29.6 gravity oil with a cut of 0.2 per cent. Flow was through a 12/64" bean from three perforated intervals within 10,514-10,595 feet. Located on the southwest quarter of Section 20-30s-28e, the well was drilled to a total depth of 10,928 feet and cemented 5½" casing at 10,745 feet. Signal's discovery is in the Kernsumner area, five miles west of the Mountain View Oil Field.

Buttonwillow Gas Completion

Carr and Wrath completed Mobil No. 1 flowing 600 mcf of gas per day through a 6/64" bean with pressures of 1475/1000 psi. Twenty-four feet of zone is open to production within the interval 2563-3314 feet. Located on the southeast quarter of Section 36-27s-22e, the well was drilled to a total depth of 3500 feet and cemented 4½" casing at 3482 feet. Nearest production is ½ mile to the southeast.

Reserve Completion

Reserve Oil & Gas Company completed R-S-T No. 16-29 flowing 250 b/d of 40.2 gravity oil with a cut of 5 per cent through a 16/64" bean with a flow pressure of 850 psi. Located on the southwest quarter of Section 29-11n-19w, two locations north and one location east of production at the Wheeler Ridge Field, the well was drilled to a total depth of 8834 feet in Basalt and cemented 7" casing at 8830 feet. 7" casing is perforated from 8742-8815 feet and top of the Basalt was logged at 8818 feet.

South Ten Section Wildcat

Standard Oil Co. is drilling below 8100 feet on KCL No. 46-33 located on the southwest quarter of Section 33-30s-26e. Standard's test is one mile southwest from Richard S. Rheem's Norris-KCL-A No. 11X-34 completed as a new pool discovery flowing 150 b/d of 29 gravity oil from the Stevens Sand perforations 9018-9085 feet.

Kern County Wildcat

Arrowhead Exploration Company is moving in rotary to drill Monterey No. 2 located on the northeast quarter of Section 25-27s-23e. The well will be drilled to about 4500 feet and is on the east flank of the Semitropic Gas Field.

Kern River Test Suspended

Kern Oil California Limited drilled to a total depth of 6073 feet on Well No. 33-58X and after plugging back to 910 feet has suspended operations. Located on the southeast quarter of Section 33-28s-28e, the test was bottomed in Basement.

Helm Development Well

Nordon Corporation, Ltd., is drilling below 5000 feet on Noble No. 6-6 located on the southeast quarter of Section 6-17s-18e. The well is an offset to production and will be drilled to approximately 7000 feet.

Two Antelope Hills Tests

Texaco Inc. has staked locations for two field development wells in the Antelope Hills Field. Voigt Nos. 504-6 and 537-6 are both located on the northeast quarter of Section 6-28s-20e.

Comanche Point Test

Leroy C. Gould has staked location for Well No. 1-T-9 on the northeast quarter of Section 32-12n-18w, west of the Comanche Point Field.

Gosford Area Wildcat

Socony Mobil Oil Company, Inc., is planning to drill a deep test in the Gosford area about two miles east of the Gosford Field. Location for

ACIDIZE WITHOUT DAMAGING CORROSION

with Halliburton's new MULTIPLE SERVICE ACID MSA

MSA is Halliburton's new acidizing medium combining acetic acids with inhibitors and surfactants. This new acid makes possible effective treatments in situations where regular HC1 acid cannot be used due to temperatures or other well conditions which could cause damaging corrosion on tubing, casing, or pump parts.

MSA *for hot wells*

The slow reaction rate of MSA on limestone permits treatments of wells with bottom hole temperatures exceeding 250°F. Contact with down-hole equipment in excess of 24 hours can be allowed without corrosion damage.

MSA *as a perforating fluid*

A relatively small quantity of MSA can be used as the cement displacement fluid to bump the cementing plug and be left in the hole to help avoid perforation damage. Considerable rig time can often he saved with MSA since it is unnecessary to bump the plug with water or mud, swab, run a slug of HC1, perforate, and swab again. MSA can be used as a breakdown fluid to spearhead a fracturing treatment, if the fluid in the casing behind the MSA is compatible.

MSA *for removing scale*

A pump scaled with calcium carbonate can be treated *in the hole* with MSA to remove the scale. Even for extended periods, MSA exhibits little effect on chrome plated parts or stainless steel, and no damaging effect on aluminum, permitting this long contact without damaging the pump or the tubing.

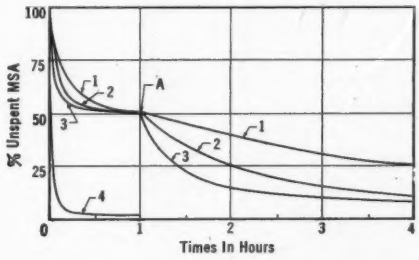
MSA *for leading conventional HCl treatments*

A slug of MSA spotted ahead of a regular HC1 treatment will help improve results due to the retarding action of MSA which keeps live acid at the leading edge of the treatment for longer periods than faster reacting HC1.

These are but a few examples of the many new applications being made possible by MSA. Check with your Halliburton man for the latest details — and the full story on how MSA may increase stimulation results for your wells.

Two samples of P-105 steel subjected to a 72 hour acid exposure test at 250° F. (left) in MSA and (right) in HC1 acid. Note the excessive pitting caused by HC1 with the effect of MSA on the other sample barely noticeable.

REACTION TIMES ON LIMESTONE
MSA vs HCl



A. Pressure released from 1000 P. S. I. to atmospheric pressure.

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2. 160° F.
3. 240° F.
4. 15% HCl @ 1000 P. S. I., 80° F.

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the test will be near the S¼ corner of Section 17-30s-27e.

NORTHERN CALIFORNIA

New Gas Pool Discovery

In the Marysville-Buttes area of Sutter County, Buttes Gas & Oil Company, Operator, completed Buttes-Carroll No. 17 as a new pool discovery flowing 4500 mcf of gas per day through a ⅜" bean with pressures of 1340/1400 psi and a shut-in pressure of 2300 psi. 5½" casing is cemented at 5160 feet and perforated at intervals from 4805-5018 feet. Total depth of the well is 7000 feet. The completion is located on the northeast quarter of Section 32-16n-1e, 1½ miles northwest of its recent discovery, Buttes Community No. 16, and slightly over two miles southeast of Occidental Petroleum Corp.'s new West Butte Field. One mile southeast of the discovery, Buttes drilled to 1597 feet on Buttes Community No. 18 and has cemented 5½" casing on bottom. The well is located on the southeast quarter of Section 33-16n-1e.

Texaco Gas Completion

Texaco Inc. completed McCune No. 3 flowing 1500 mcf of gas per day through a ¼" bean from the McCune Zone perforations 5472-5490 feet. Flow pressure was 1400 psi and shut-in pressure 1600 psi. The completion is a northeast offset to its McCune No. 1, which was completed as a gas well and in 1960 started making oil, the first commercial oil well in the Sacramento Valley. Located on the northeast quarter of Section 32-8n-1e in Solano County, McCune No. 3 was drilled to a total depth of 5700 feet and has 4½" casing cemented at 5642 feet.

Balken Corp. Gas Test

Balken Corp. has staked location for Young-Basolo No. 1, a San Joaquin County wildcat gas test on the northwest quarter of Section 21-3s-6e. The location is in the Vernalis area, one mile northeast of the John M. Young's Unit No. 1, completed from the intervals 5089-5080 and 4265-34 feet.

W. Grimes Outpost Completion

Gulf Oil Corp. of Calif. completed C. B. Stoddard No. 2 flowing 7268 mcf of gas per day through a ¾" bean with 1675 psi flow pressure. Flow is from nine perforated intervals between 6831-6990 feet. Located on the northwest quarter of Section 10-14n-1w in Colusa County, ½ mile east from present production, the well was drilled to a total depth of 8514 feet and cemented 5½" casing on bottom.

Occidental Wildcat

Occidental Petroleum Corp. drilled to a total depth of 6984 feet on Forni No. 1 and after running logs abandoned the gas test. Location of the wildcat was on the southeast quarter of Section 13-3s-7e in Modesto County, seven miles east of the Vernalis Gas Field.

Sacramento County Wildcat

California Exploration Company, c/o E. M. Shannon, Azusa, Calif., has awarded a contract to the Brown Drilling Co. to drill Sacramento Unit No. 1 on the southwest quarter of Section 20-7n-5e in the East Freeport area. The well will be a Basement test at about 8500 feet and geologists George Roth & Associates will do the engineering.

Sutter County Gas Test

Sacramento Oil & Gas Company (A. A. Hopkins, Jr., president) has staked a location for Osterli No. 1 on the northwest quarter of Section 5-11n-4e in the North Nicolaus area. The well is scheduled to be drilled to about 7000 feet. This is a newly formed company and they have in excess of 40,000 acres under lease.

Kern Oil Wildcat

Kern Oil California Limited is grading roads and rig site for Ostrum Unit One No. 1 to be drilled on the northeast quarter of Section 2-5n-3e in Solano County. The test will be drilled to about 6000 feet and is slightly over 2 miles northeast of the Liberty Cut Gas Field.

McCulloch Gas Test

McCulloch Oil Corp. of Calif. is drilling below 4000 feet on McCulloch-Soite No. 1 located on the northeast quarter of Section 17-2n-1w in Contra Costa County. The test is in the Los Medanos area slightly over ½ mile east of its McCulloch-Duarte No. 1, completed flowing on an open-flow potential test 180,000 mcf of gas per day.

Gulf Gas Completion

Gulf Oil Corp. of Calif. extended the Kirk Gas Field ½ mile to the north with the completion of Goff-Erdman Tract No. 2 flowing 3800 mcf of gas per day through a ¾" bean from the perforated interval 7968-8012 feet. Flow pressure was 1500 psi. Located on the northwest quarter of Section 15-13n-1e in Colusa County, the well was drilled to a total depth of 8402 feet and cemented 4½" casing at 8225 feet.

Wild Goose Wildcat

Rinde Oil Company is drilling below 2000 feet on Terhel Farms No. 2, a wildcat test in Colusa County located on the southwest quarter of Section 1-17n-1w.

Arbuckle Outpost

Occidental Petroleum Corp. is drilling below 6500 feet on Arbuckle Unit R No. 1 located on the southwest quarter of Section 11-13n-2w in Colusa County. This most southerly test falls 3500 feet southeast of production.

COASTAL AREA

Arroyo Grande Outpost

Luard Corporation is preparing to drill Rauschenplat-Luard No. 1 located on the northwest quarter of Section 5-32s-13e in San Luis Obispo County. The well is in the Oak Park area and will be drilled to approximately 3200 feet.

San Mateo County Test

Neaves Petroleum Developments is grading roads and rig site for Neaves-Union-Burns No. 15 to be drilled on the southwest quarter of Section 21-7s-4w. Rig site falls ½ mile west of production at the La Honda Field.

Santa Barbara County Wildcat

Texaco Inc. has staked location for Wickenden No. G-11-0 on the southwest quarter of Section 28-9n-32w. Texaco's wildcat is in the Olivera Canyon area.

Cuarta Canyon Development

Texaco Inc. completed State 2206.1 No. 7 from a total depth of 6800 feet. With the exception of the depth, no other information was released. State 2206.1 No. 8 is drilling below 3000 feet. Both wells are located on projected Section 11-4n-33w offshore from Cuarta Canyon in Santa Barbara County.

Oxnard Well Suspended

Standard Oil Company drilled to 10,510 feet on Claberg No. 1 and after plugging back to 9050 feet has suspended operations. Location of the well is on the northwest quarter of Section 32-2n-21w about ¼ mile northeast of production.

Guadalupe Outpost Test

Union Oil Company of Calif. is grading roads and rig site for Leroy No. L-12 to be drilled on the southeast quarter of Section 1-10n-36w in San Luis Obispo County. The test is an outpost to present production.

OTHER AREAS

Alaska

Standard Oil Company of Calif. plans to spud about the middle of July on its Icy Bay area wildcat, Chaix Hills No. 1, located on the southwest quarter of Section 4-22s-25e. Standard's test is located on a 247,000-acre block and is approximately 300 miles southeast of the town of Anchorage.

Arizona

Atlantic Refining Company has staked location for an Apache County wildcat on the southeast quarter of Section 7-40n-29e. Navajo-7 No. 1 will test the Devonian at about 5600 feet and is 1½ miles southeast of the Dry Mesa field Mississippian production.

Montana

An easterly outpost of the Stensvad Field was completed by American Climax Petroleum Co. and Lawrence L. Barker, Jr., pumping 150 b/d of 33 gravity oil from two casing notches at 5411 feet and 5403 feet from the Tyler A Sand. Located on the southwest quarter of Section 6-11n-32w in Rosebud County, Government-Brown No. 2 was drilled to a total depth of 5660 feet and has 5½" casing cemented at 5620 feet. Top of the Tyler A Sand was logged at 5398 feet.

Miles Jackson is drilling below 3800 feet on Stensvad No. 1 located on the southwest quarter of Section 10-10n-30e in Musselshell County. The wildcat is three miles southwest of the Keg Coulee Field and will be a Tyler test to about 4800 feet.

Ben J. Taylor is drilling below 1500 feet on Savage No. 2, a Rosebud County wildcat located on the northwest quarter of Section 3-11n-33w four miles northeast of the Sumatra Field. The well is scheduled to test the Lower Tyler at about 6000 feet.

Phillips Petroleum Company has staked location for a Pondera County wildcat, Kingston No. 1, on the southwest quarter of Section 20-30n-5w. Located in the Valier area about nine miles southeast of production at the Southwest Cut Bank Field, the well will be a 3400-foot Madison test.

American Climax Oil Co., Petroleum Company, Lawrence L. Barker, Jr., and Continental Oil Co. are preparing to complete Government No. 32-14 after recovering 400 barrels in 4 hours on a swab test. Production is from a casing notch in the Tyler A Sand at 4376 feet. The well is a southeast outpost to the Keg Coulee Field in Musselshell County. Located on the southwest quarter of Section 32-11n-31e, the completion was drilled to a total depth of 4493 feet and cemented 5½" casing on bottom.

Donnell Drilling Company and the Pure Oil Company have staked location for Portwine No. 1 on the southwest quarter of Section 5-9s-50e in Powder River County. The wildcat will test the Minnelusa at about 8500 feet.

A Sand Springs area wildcat has been staked by Kewanee Oil Corp. on the northeast quarter of Section

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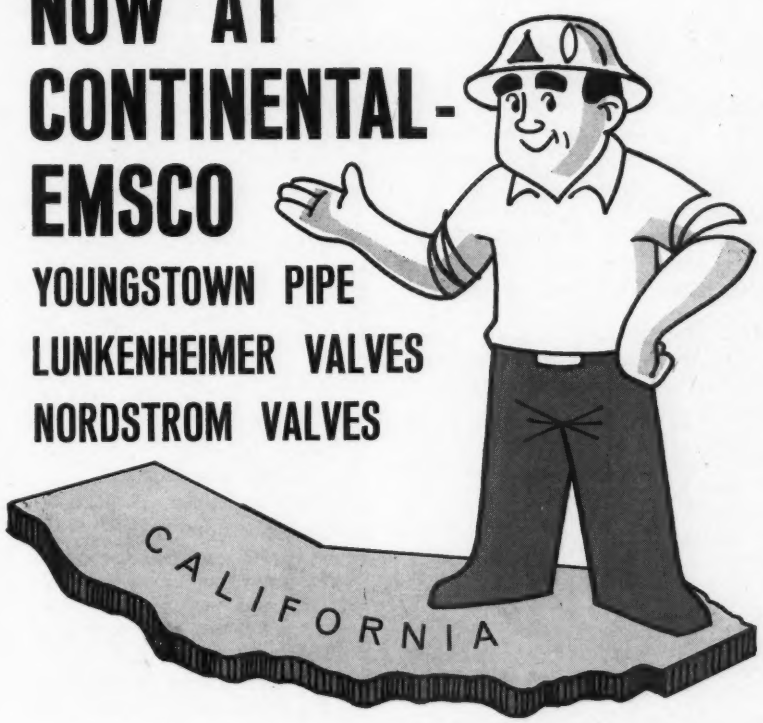

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5-14n-33e in Garfield County. The well is scheduled to test the Heath at approximately 5200 feet.

Great Northern Drilling Company's Glacier County discovery, Two Medicine No. 1, continues to test with a flow of 2000 mcf of gas and a spray of distillate from the Madison perforations 8895-9019 feet. Located on the northwest quarter of Section 19-31n-11w in Montana's Disturbed Belt area, the discovery was drilled to a total depth of 9453 feet and has 5½" casing cemented at 9070 feet. The wildcat is six miles east of the town of East Glacier.

In the Wolf Creek area of Carter County, Dakamont Exploration Co. has staked location for Government No. 1 on the southwest quarter of Section 21-9n-5e. The well will be a 2600-foot Morrison test.

Nebraska

The Superior Oil Company has staked location for a Western Nebraska deep test in Cheyenne County. Located on the northwest quarter of Section 34-16n-53w, Superior's well, Travis-State No. 1, will be a pre-Cambrian test at about 8000 feet.

New Mexico

P. M. Drilling Co. completed Bayless No. 1 as a new field discovery pumping 85 b/d of 38 gravity oil from the Gallup Zone 4150-4429 feet. Total depth of the discovery is 4429 feet and 4½" casing is cemented at 4150 feet. Location of the well is on the northeast quarter of Section 15-28n-1w in Rio Arriba County, about ten miles north of the Puerto Chiquito Field.

Continental Oil Company's Table Mesa No. 3-18 flowed at an estimated rate of 100,000 mcf of gas on an open flow test and was gauged at 20,300 mcf through a 3" line, and is conditioning the hole. Flow is from the Pennsylvanian, with a total depth of 7113 feet. The well is a deep test of the Table Mesa Field and is located on the northwest quarter of Section 3-27n-17w in San Juan County.

Lemm and Maiatico are preparing to complete Arellano No. 1 after a rise of 2500 feet oil in 36 hours. The well, an apparent Rio Arriba County discovery, is located on the northwest quarter of Section 5-24n-1e about six miles south of shallow production at the Puerto Chiquito Field. Present depth of the well is 4406 feet with 4½" casing cemented at 4353 feet.

Roy Furr, independent operator of Lubbock, Texas, is grading roads and rig site for Sun-Federal No. 1 to be drilled on the southeast quarter of Section 14-21n-4w in Sandoval County. The wildcat will test the Gallup at about 5000 feet and is ten miles south of Gallup production at the Lindrith Field. The test is on acreage farmed out by the Sun Oil Co.

W. T. Hudson completed Fairfield No. 1 flowing 28,478 mcf of gas per day on an open flow potential test, and through a ¾" bean flow was 11,686 mcf per day. Flow pressure was 900 psi and shut-in pressure 2180 psi. Production is from the Dakota perforations 6001-6023 feet. Located on the northwest quarter of Section 14-27n-13w in San Juan County, the completion was drilled to a total depth of 6145 feet and cemented 4½" casing at 6145 feet. Although the well was not frac't, offset wells which were frac't were good for approximately 5000 mcf.

Utah

DeKalb Petroleum Company resumed operations on Unit No. 1 located on the northeast quarter of Section 8-10n-22e and on a test flowed 5000 mcf of gas per day from the Mesaverde through a 24/64" bean. This is the first Mesaverde production in the area. Located on the northeast quarter of Section 8-10s-22e in Uintah County, the well has a total depth of 8270 feet.

American Metal, Climax Inc., and McCulloch Oil Corp. drilled to a total depth of 4640 feet on Government No. 1 and abandoned the well without testing. The wildcat was located in the Black Dragon area on the southeast quarter of Section 32-21s-13e in Emery County.

Intermountain Oil & Gas Co. is preparing to drill a Grand County wildcat on the northeast quarter of Section 35-25s-23e. Located in the Castle Creek area about 25 miles east of the Big Flat Field, the well will test the Paradox at about 3000 feet.

Bitter Creek Oil Co. has staked location for Eagle No. 1 on the southwest quarter of Section 11-18n-24w in Grand County. The wildcat will test the Dakota at about 2200 feet.

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William Stricklin, Farmington operator, has staked location for Norma No. 1, a San Juan County wildcat on the northwest quarter of Section 33-39s-18e. Rig site is about 13 miles north of Mexican Hat and will test the Mississippian at approximately 3800 feet.

Pan American Petroleum Company continues to test its Grand County wildcat, Salt Wash No. 1, with a flow of 160 barrels of oil in 9 hours through a 20/64" bean from the Mississippian perforations 8693-8707 feet. Flow pressure was 200 psi and shut-in pressure 2350 psi. Location of the test is on the southwest quarter of Section 15-23s-17e with 5½" casing cemented at 8898 feet. Total depth of the well is 9523 feet and top of the Mississippian was placed at 8422 feet.

Wyoming

C. E. Brehm is moving in rotary on Unit-A No. 1 located on the northeast quarter of Section 16-13n-95w in Sweetwater County. The location is on the 87,000-acre Shell Creek Unit in the southeastern part of the Green River Basin and will test the Fort Union at about 8500 feet.

Mountain Fuel Supply Co. is drilling below 2500 feet on Unit No. 1 located on the southeast quarter of Section 12-16n-106w in Sweetwater County. The wildcat will be the first to test the proposed Firehole Unit in the southeast portion of the Green River Basin, and will test the Dakota at about 11,000 feet. The location falls 15 miles south of Rock Springs.

Amerada Petroleum Corp. is grading roads and rig site for Moore No. 1, a Weston County wildcat 15 miles southwest of Raven Creek. Located in the Chalk Butte area on the southeast quarter of Section 12-46n-67w, Amerada will test the Minnelusa at about 8500 feet.

At the northern end of the Patrick Draw Field, Colorado Oil & Gas Company's State 36 No. 3 flowed 1500 mcf of gas per day from the Almond perforations 4740-4750 feet and is testing an unidentified zone higher up the hole. Located on the southwest quarter of Section 36-20n-99w in Sweetwater County, the test was drilled to a total depth of 5075 feet and has 5½" casing cemented at 4853 feet. Top of the Almond was logged at 4635 feet.

Location for a Mesaverde test in Sweetwater County has been staked by the Union Texas Natural Gas Company on the proposed Brooks Draw Unit. Located on the southwest quarter of Section 11-14n-102w east of the Potter Mountain Field, the well is scheduled to test the Mesaverde at about 8600 feet.

Stuarco Oil Company recovered 6000 feet of oil on a formation test of the interval 6539-6555 feet at George No. 1 and is running casing with the total depth at 6603 feet and top of the Dakota logged at 6490 feet. An apparent Dakota discovery, the wildcat is located on the southwest quarter of Section 27-45n-66w in Weston County about two miles northwest of production at the Lodge Pole area.

Two Standard Companies Join Interests

From Louisville, Kentucky, comes a joint statement by R. G. Follis, chairman of the board, Standard Oil Company of California, and W. C. Smith, president of Standard Oil Company of Kentucky, as follows:

"The managements of our two companies have agreed on a basis for bringing together our respective company interests.

"Joining of the two companies is in accordance with a decree entered by the United States District Court for the Western District of Kentucky with the consent of the United States Department of Justice.

"The agreement of the managements of the two companies calls for an issue of a new voting cumulative convertible preferred stock of Standard Oil Company of California with an annual dividend rate of $3.30 per share. Stockholders of the Kentucky company will receive one share of the preferred for each of the common shares of the Kentucky company. The preferred stock will be convertible at any time in the ratio of one share of preferred for one and one-quarter shares of common stock of Standard Oil Company of California. The preferred stock will be noncallable for five years, but thereafter will be callable at $80 per share.

"Stockholder approval of the agreement is required."

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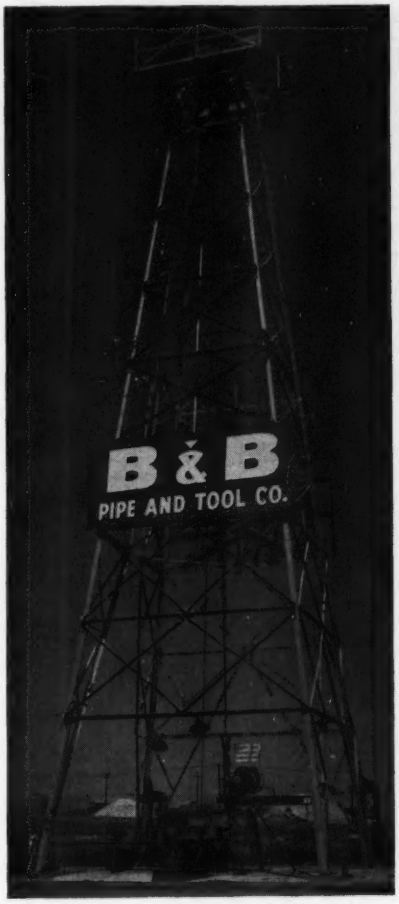

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The lunatic, after a very exemplary record of sanity, was discharged from the asylum. The following morning, at home, he decided to shave as every sane man does. He nailed the mirror to the wall, stood before it, lathered his face, then proceeded to shave with his old-fashioned razor. Just then the nail slipped and the mirror fell to the floor. He stood gazing at the blank wall, then remarked bitterly: "Just my luck. Second day out and I've cut my bloomin' head off."

The tired clerk had pulled down blanket after blanket until only one was left on the shelf. Then the customer remarked casually: "I don't really want to buy today. I was looking for a friend."

"Well, madam," said the clerk, "I'll be happy to take down the last one if you think she's in it."

A drunk was sitting at a bar next to a man and his wife. Suddenly the drunk came forth with a resounding burp. "How dare you burp before my wife," thundered the indignant husband.

"A thousand pardons, sir," replied the drunk. "I did not know it was madam's turn."

The teacher asked the class to list, in their own opinion, the eleven greatest Americans of today. After a while, she stopped at one desk and asked, "Have you finished your list yet, Benny?"

"No, not yet, teacher," replied Benny. "I just can't decide on a fullback."

"I had bad luck with both my wives."

"How was that?"

"The first one left me."

"And the second?"

"Didn't."

Druggist: "Will you have the large, economy size?"

Customer: "No. Give me the small, extravagant size."

Husband: "Darling, I brought home some things for the person I love best. I bet you can't guess what they are."

Wife: "Razor blades, cigars and a dozen golf balls."

"My wife has the worst habit of staying up until one or two o'clock in the morning, and I can't break her of it."

"What is she doing all that time?"

"Waiting for me to come home."

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